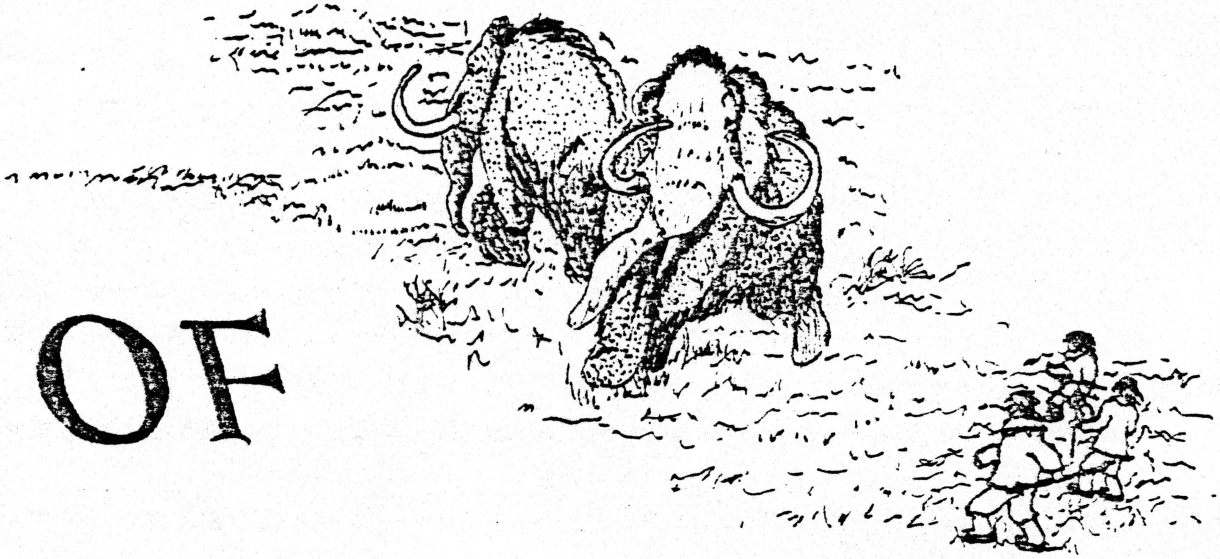
# THE DEVELOPMENT OF MAN IN ALASKA



# THE DEVELOPMENT

# OF

# MAN IN ALASKA

## A RESOURCE AND ACTIVITY UNIT


**WRITTEN BY:**

Dagny Evans
Randi Marks
Paul Vick
Ruth Webster
Steve Walsh

**PRODUCED BY:**

Indian Education Act Program

of the

FAIRBANKS NORTH STAR BOROUGH SCHOOL DISTRICT

P. O. BOX 1250

FAIRBANKS, ALASKA 99707

INDIAN EDUCATION PARENT COMMITTEE

Andy Angiak - Chairperson

**PROJECT DIRECTOR**

Betty J. Magnuson

**TYPED BY:**

Elaine Lowe
Diana Rider



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Indian Education Program

INVITATION TO PARENTS

October 2, 1980

Alaska Native Studies would like to invite you to attend our program on "The Development of Man in Alaska". Your son's/daughter's class will be attending the program on

_____ _____ _____ at _____
Day Month Date Time

in Room 110 of Old Main School at 9th and Cushman.

The program is a part of the study of Alaska by the third and seventh grades. It will last two hours and feature many artifacts relating to pre-historic man in Alaska with plays being performed by the class and a replica of an archaeological dig.

We hope you are able to attend the program and we would welcome any comments or questions at the conclusion of the program.

Thank you.

Sincerely,

Paul Vick

Paul Vick,
Curriculum Developer
Alaska Native Studies

PV:mel

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# FORWARD

Development of Man In Alaska is a supplementary unit put together by the Alaska Native Studies Program of the Fairbanks North Star Borough School District. It was designed for both third and seventh grades with some high school Alaska history classes using portions of it as well.

The unit focuses on several major aspects of life in Alaska. First, it examines the formation of Beringia and the flora and fauna present during and just after the last glacial age. Then the unit focuses on early man in Alaska through looking at the artifacts left behind. Finally, the unit ends with a look at the contact between the Russian and the Aleut people.

The unit consists of three entities. The first phase is covered by each classroom teacher prior to attending our two hour program. The teachers are sent a packet of pre-visit material (see pp. 1-45) including a vocabulary list, information on glaciation and archaeology, and two plays that the students prepare for the second part of the unit.

The formal program by Alaska Native Studies makes up the second phase of the unit (see pp. 46-68). Each class attends a two hour program spread over a ten week period.

The third phase of the program is the post-visit or follow-up materials that we sent back with the classroom teacher (see pp. 69-102). A lot of in-depth background information is included to assist the teacher in handling any questions.

The unit was a supplementary one that was incorporated into the regular social studies program of the Fairbanks North Star Borough School District.

# INTRODUCTION

Alaska Native Studies first program, "The Development of Man In Alaska", takes a rather different approach than any of our previous six programs. For the first time, a program will examine the record of earliest man in Alaska and end it with the earliest European contact with the first Alaskans in the mid 18th century. None of our other programs have attempted to reach back in time to a period only dimly understood - a time span of at least 12,000 years, perhaps much longer.

The program is divided into three main sections. The first section will examine the last ice age, Beringia, flora and fauna during the last ice age, and earliest man in Alaska.

The second part will be an examination of an archeological site. Man's early tools and possible mode of living will be high-lighted.

Finally, the program will conclude with a confrontation between the first Europeans to travel to Alaska, the Russians and the Aleut people.

Our pre-activities include materials that apply to all three of our sections. Information on glaciers and glaciation is included relating to the first part. The specifics of Alaskan glaciation will be examined during the program. Another activity for this section on earliest man is a hunting play.

Substantial background material on the archeological dig section of the program, has been provided for both the teacher and the students.

The long play, "The Strangers" is to be presented by each class for our final section. This play will require considerable time for the students to prepare.

Any questions concerning the program should be directed to Paul Vick, 452-2000, ext. 241, or stop into Room 212 Old Main School.

## VOCABULARY

archeologist or archaeologist - scientist who finds and studies what people have left behind which is usually found buried in the ground.

archeology or archaeology - Study of people who once lived on the earth by means of the material they left behind.

artifacts - any object made by a person.

Beringia - a land mass between Russia and Alaska that was formed thousands of years ago.

baidar - a large open Aleut boat with a wooden frame covered with skins.

baidarka - small kayak-like boat, pointed at both ends, completely covered with skins except for a hole in the middle.

barabara - the traditional Aleut house made by digging a shallow pit, then propping up beams of driftwood, covering these with grass mats - then covering it all with sod.

culture - learned behavior shared among a group of people.

fossil - the remains of something that was once alive and has been preserved in some way.

shaman - a medicine healer, teller of the future, and one who could speak with the spirits.

prehistoric - history of man before writing.

kelp - long brown seaweed.

right whale - a large baleen whale also called the bowhead.

glacier - an ice and snow mass formed when more snow falls each year than melts.

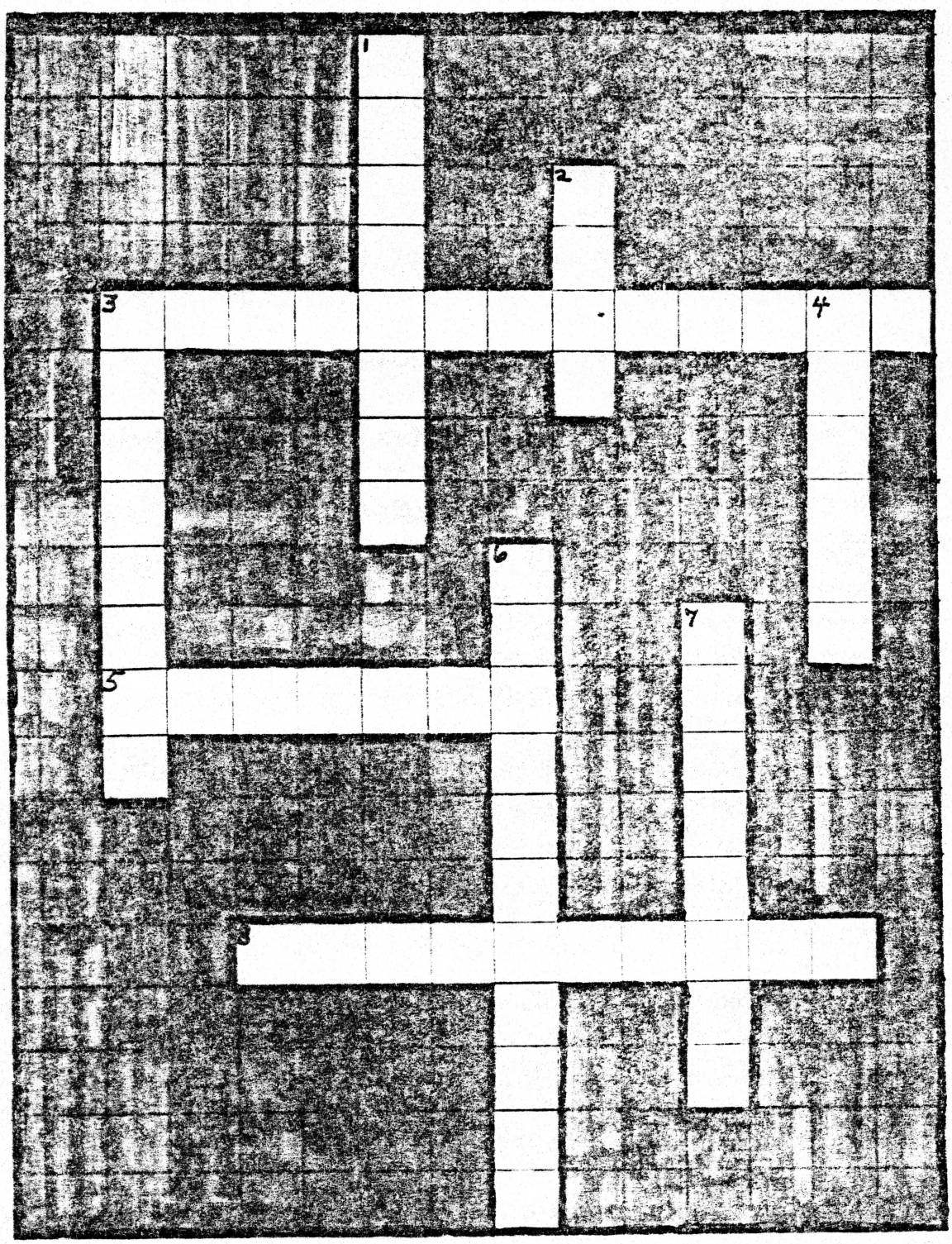
ice sheet - a very thick blanket of ice which covers everything in an area.

ice age - a time in the earth's history when ice sheets covered much of the land.

core tool - the tool remaining after flakes have been struck off a stone.

flake tool - tool made from a stone flake struck off a stone. The flake may be further worked.

# Crossword Puzzle



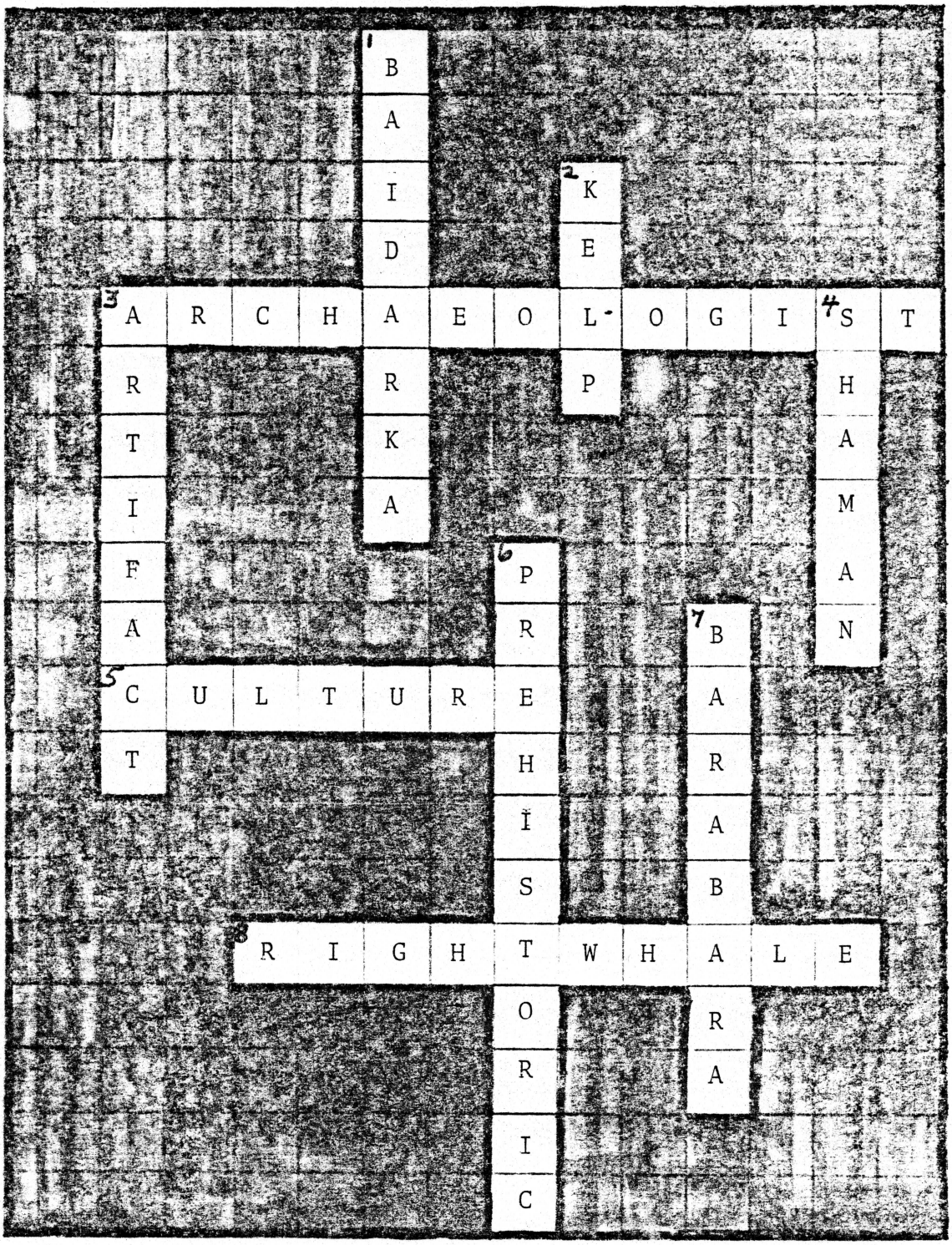

ACROSS:

3. Someone who finds and studies old artifacts is called an _____.
5. Learned behavior shared by a large group of people is called _____.
8. The _____ _____ is a large baleen whale.

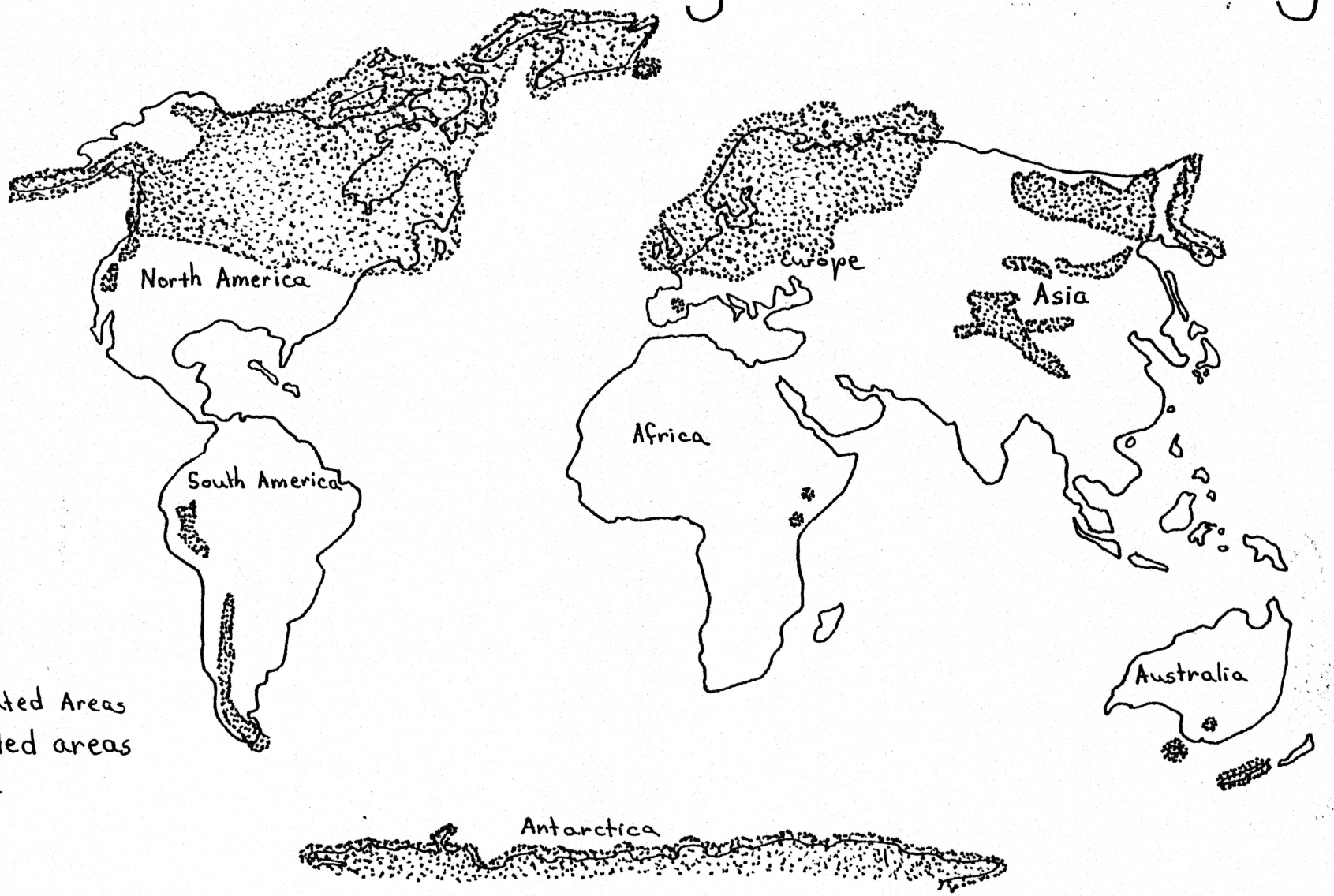
DOWN:

1. The small, kayak-like, Aleut boat covered with skins is a _____.
2. _____ is a long brown sea weed.
3. Any object made by a person is called an _____.
4. _____ can speak to animal spirits.
6. The time before man learned to write is _____ time.
7. The Aleuts traditional house was named a _____.

# Crossword Puzzle



# The World During The Ice Age




- Glaciated Areas

Color dotted areas blue

## THE MAKING OF A GLACIER

There was a large hollow near the top of the ridge. For many years the winter snows gathered in the hollow. The snow had not melted, even in the summer, for the weather had remained cool all year. Each winter more snow fell in the hollow adding to the snow already there. The snow near the bottom of the hollow was pressed down by the weight of the new snow until it became ice. Over the years the hollow was completely filled with this mass of snow and ice. The ice began to move over the lower lip of the hollow pushed by its own tremendous weight. As the ice worked its way down the valley, it scraped away rocks, dirt, sand, brush and anything else in it's path widening and rounding the sides of the valley.

This build-up and movement of a huge ice mass is called glaciation. The ice mass itself is a glacier. The glacier formed in the hollow will continue to move down the valley as long as more snow falls each winter than melts each summer. The glacier will fall back if more snow melts in the summer than falls during the winter.

In some parts of the world many glaciers have grown until they overflowed their valleys and joined with each other to become an ice sheet which covered wide areas. The largest ice sheet today is the Antarctic Ice Sheet which covers five million square miles of land. The Antarctic Ice Sheet is 14,000 feet thick in places. An ice sheet is like a very thick blanket of ice covering everything in an area.

# ICE AGES

The earth has been through several warming and cooling stages. The cooling stages caused the four great ice ages. An Ice Age is a period in the earth's history when ice sheets cover much of the land. The first ice age that we know of began three million years ago and lasted until ten thousand years ago. This was called the Pleistocene Ice Age.

During each ice age there were several different periods of glaciation, separated by warmer interglacial periods. There were from six to twenty different glaciations during the Pleistocene Ice Age. At the height of this ice age, much of North America and Europe was covered with continental ice sheets which were ten thousand feet thick in places. When these ice sheets disappeared, they left tracks that we can see today. The ice carved out the Great Lakes and then filled them when it melted. The ice rounded out many hills and valleys and left huge boulders sitting in the middle of the plains. Scientists study these tracks to learn about glaciers and what the earth was like long ago.

# HUNTING PLAY

Teachers: Please be sure your students are prepared to present this play when they come to the program. Students may change the play if they desire (hunting scene, language, actions, etc.)

Narrator Most scientists believe that early man crossed the ice-age land mass which connected Asia to America while in pursuit of the game they lived on. Animals like the bison, caribou, and the wooly mammoth provided food, clothing and shelter for these early inhabitants. As the animals traveled further east toward what is called Alaska, the people followed. This play shows how early man may have hunted mammoth.

Dinega (runs out from behind the rock). I have sighted a herd of mammoths. If we hurry, we might be able to catch up with them. Get your spears and let's go!!

Sakaa
Taabeel
Teekana
Yoda (all stand up, grab their spears and follow Dinega behind the rock leaving Tobaana and Mildaka sitting by the fire pit).

Dinega (before he is out of sight behind the rock, he turns and speaks to Tobaana and Mildaka) Start packing up our things. If we are lucky and get a mammoth, we will move our camp to wherever the carcass is. (he turns and walks behind the rock).

Tobaana
Mildaka (start picking up the furs and tools which are laying around the fire pit).

Tobaana Let's pick up everything around the fire pit and then pack up the things inside our shelter.

Mildaka O.K. But let's not take the shelter down until the others return. They might be gone for several days.

Tobaana & Mildaka (crawl inside the shelter)

(the lights dim)

Narrator That night and half of the next day pass before the hunters return. (The lights slowly come back on as the hunters reappear from behind the rock and walk over to the tent. Dinega stays behind the rock. The returning hunters should act excited and happy)

Yoda We've done it! We've killed a mammoth!

Tobaana & Mildaka (both scramble out of the shelter)

Mildaka Did you have to go far before you caught up with them.

Sakaa Yes, (points past the rock) we traveled for a long time until we were a long way past those hills.

Tobaana Where is Dinega?

Sakaa He stayed at the kill sight to make sure that the dire wolves and sabor-tooths don't tear up the carcass.

Mildaka Sit down and rest for awhile.

Tobaana Tell us about the hunt; it must have been exciting.

Sakaa Taabell & Teekona (sit down around the fire pit -- Yoda goes into the shelter and comes out carrying a caribou hide which has been altered to resemble a mammoth. Yoda then sits down next to the other hunters).

Yoda We had traveled for a long time. Just when we started to lose hope of catching up with the mammoths, we spotted them off in the distance.

Teekona Once we spotted them, we had to decide what to do. We remembered passing a gully not too far back that had a deep bog in it.

Taaveel We knew that if we could run the mammoths into the bog, it would slow them down enough for us to kill one.

Sakaa So we ran ahead of the mammoths and started many fires which forced the animals to turn back toward the bog.

Yoda Once the mammoths were headed toward the bog we had to start a few more fires to make sure they went into the bog and not around it.

(Yoda puts the hide costume on and Sakaa picks up his spear -- they start to pantomine the hunting scene as the other two hunters tell the story. Sakaa and Yoda should be as theatrical as possible; have the students use their imagination here).

Taabeel Finally the mammoths went into the bog.

Mildaka Did all of them go in?

Taabeel No, a few escaped but not many.

Teekena Because of their great size and weight, the huge animals sank into the bog very quickly.

Taabeel We picked out one of the weaker mammoths and started to throw our spears into it. We fought with the mammoth for a long time before it finally stopped struggling and screaming and settled back into the bog to die.

Teekona In the time it took us to kill our mammoth, the other beasts had managed to drag themselves out of the bog.

(Yoda takes his robe off and lays it down on the ground and sits down next to the other hunters -- so does Sakaa.)

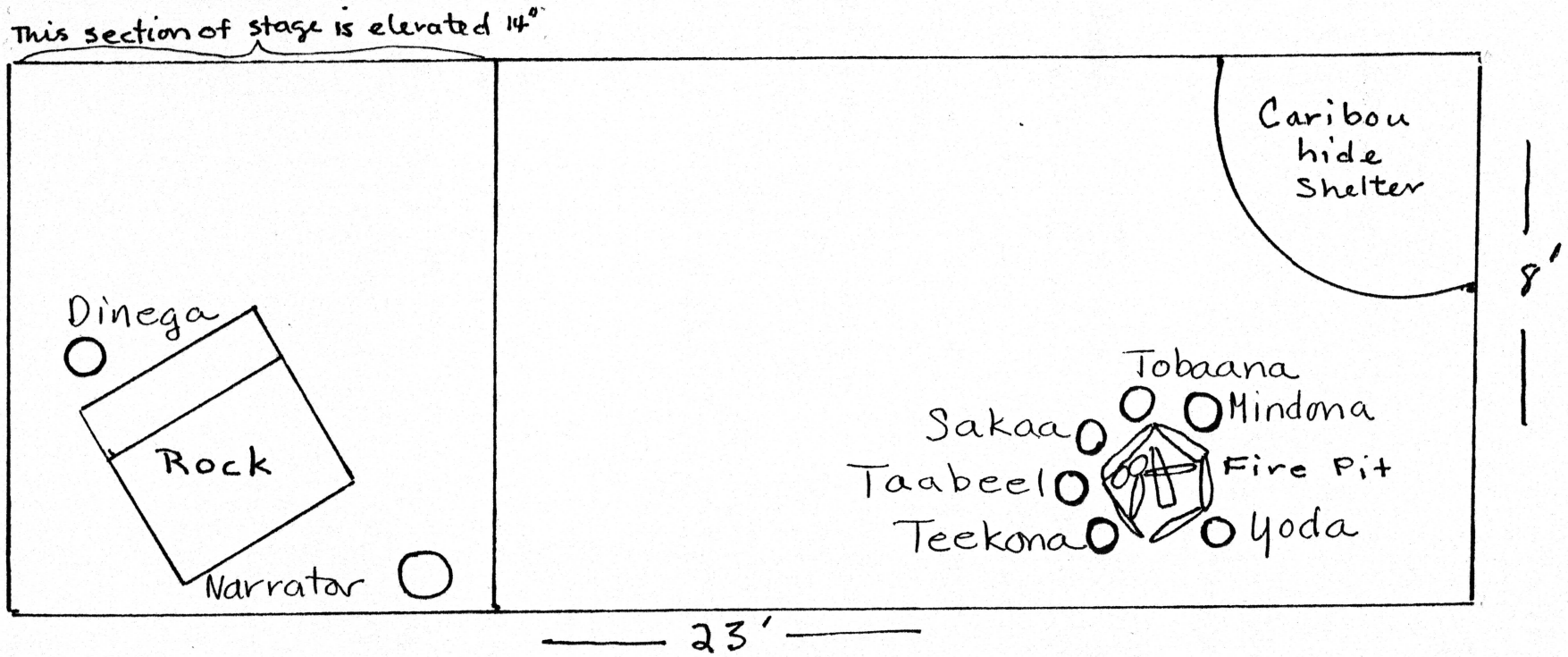
Yoda We were too tired after killing the mammoth to return to camp immediately. So we butchered part of the animal and ate some of the meat in order to build our strength back up.

Tobaana Maybe you should rest here tonight: Then we could move camp in the morning.

Sakaa No, we should move as soon as possible. It's a long way to where we killed the mammoth and Dinega is waiting for us.

(Lights dim)

Diagram of stage shows starting positions for the cast.




CAST

| | | |
|---|---|---|
| Narrator | | |
| Dineega | Hunter | Dĭ-nēē-gă |
| Sakaa | Hunter | Să-kă |
| Taabeel | Hunter | Tă-bēēl |
| Teekona | Hunter | Tēā-kăw-nă |
| Tobaana | Band Member | Tow-băn-ă |
| Mildaka | Band Member | Mill-dă-kă |
| Yoda | Hunter | Yŏ-dă |

AVAILABLE PROPS

Spears

Furs

Hide robe which resembles a mammoth

Bones (lay around the fire pit)

# TEACHER BACKGROUND
# FOR THE STUDY OF EARLY MAN
# AND AN ARCHEOLOGICAL DIG

This section is designed to acquaint the teacher with the study of early man in the world as well as in Alaska. To do this, anthropology and archeology will be described. Next culture will be defined and viewed as the archeologist does. This will be followed with a description of prehistoric stages and associated tools as set up by archeologists. The prehistoric tools of people in Alaska will then be discussed in this context. Finally, there will be some explanation of how an archeologist finds and excavates a site. The teacher is encouraged to share as much information as possible with the students.

## Anthropology and Archeology

Anthropology is defined as the study of man. As a field of study, it is usually broken down into four subdivisions: cultural anthropology, archeology, physical anthropology, and linguistic anthropology. In a general way, the distinction between cultural anthropology and archeology is that the cultural anthropologist studies (and usually lives with) living peoples and the archeologist studies what people have left behind and what is now generally found buried in the earth. Physical and linguistic anthropology does not need to be defined and learned in this program.

## Culture and the Archeologist

There are many definitions of culture. (A. L. Kroeber and C. Kluckhohn wrote a book on definitions of culture; Culture: A Critical Review of Concepts and Definitions, published by Cambridge Press, 1952). Culture is usually defined with an emphasis to best suit a particular study. James Deetz, an archeologist, defines culture as:

> "an uniquely human system of habits and customs acquired by man through an extrasomatic process, carried by his society, and used as his primary means of adapting to his environment" (1967:7).

A simpler definition of culture is "learned behavior" or "patterned learned behavior". The definition of "learned behavior" was common earlier in this century but came into question as studies on animal species took place. It was found that certain animal species (apes, monkeys, wolves, dogs....) could learn too.

As a good first definition for students to learn and for the purposes of this program, the above simple definition of culture is given in the students vocabulary list. It will be left to the teacher to grasp the meaning of culture and to share this understanding with students. There is no one correct definition of culture and depending on the interest and capabilities of the class the concept can be shared with the class. Further questions and discussion can take place during the program.

Deetz qualifies this definition of culture by looking at what the archeologist does. He states:

> "Culture is highly perishable, and therefore cannot be excavated. No one has ever dug up a political system, a language, a set of religious beliefs, or a people's attitude toward their ancestors. Yet such things as political and religious behavior, language, and social interaction affect what the archaeologist does recover. The patterning which the archaeologist perceives in his material is a reflection of the patterning of the culture which produced it. Pots, arrowheads, house floors and axes are the products of culture, not culture in themselves, but they are linked to culture in a systematic manner. It is the archaeologist's task to discover how cultural behavior is shown in its products (ibid)".

In other words the archeologist seeks to learn about culture from the fragmentary remains of products of human activity.

## Prehistoric Stages and Associated Tools

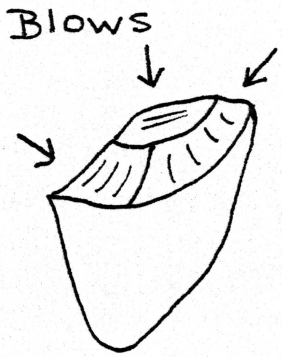
The following are seven stages of prehistoric development set up by archeologists: Lower Paleolithic, Middle Paleolithic, Upper Paleolithic, Mesolithic, Neolithic, Bronze Age, and Iron Age. The Neolithic, concerning the rise of agriculture, and the following two stages can be

omitted from discussion with this program. The Mesolithic usually refers to local tool adaptations in Europe after the Upper Paleolithic and is replaced here by a discussion on prehistoric tools in Alaska. Each of the other stages will be described here along with appropriate definitions. The following chart gives approximate dates to the time periods discussed.

| | |
|---|---|
| Lower Paleolithic | Two million years ago to 100,000 years ago. |
| Middle Paleolithic | 100,000 years ago to 40,000 years ago. |
| Upper Paleolithic | 40,000 years ago to 11,000 years ago. |
| Prehistoric tools found to date in Alaska | Possibly as old as 13,000 years ago to near present. |

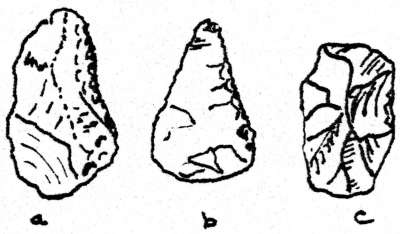
Lower Paleolithic (2,000,000 years ago to 100,000 years ago) - The Lower Paleolithic begins with the manufacture of the most ancient tools. Coinciding with this emergence is the emergence of man (Australopithecus and/or Homo habilis, and Homo erectus). Australopithecus and/or Homo halilis made the oldest tools, called pebble tools and oldowan tools. (Oldowan is an adjective formed from Olduvai, a gorge in Tanzania, where Louis and Mary Leakey first found these tools; the term was then applied to the pebble tool industries of south and east Africa). These tools were simply formed by hitting a rock against another rock.

Pebble (Oldowan) tool:



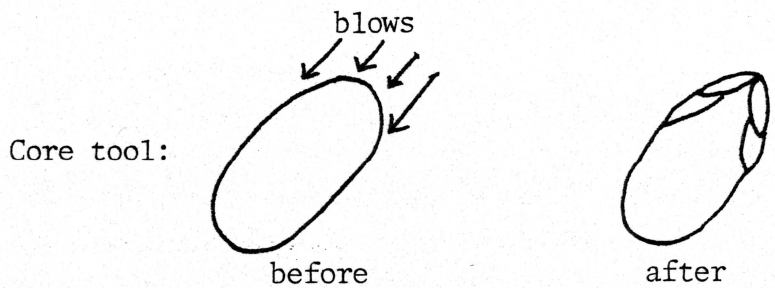
The edge formed can be used for scraping hides, cracking bones, and for other purposes. These tools are found in association with bones suggesting these uses.

After Australopithecus and Homo habilis came Homo erectus. Skeletal remains have been found in Europe, Africa, and all the way over to East Asia. At Choukoutien near Peking, China there is evidence Homo erectus knew the use of fire. Homo erectus further refined stone tools. The primary example is the handaxe. The oldest and crudest handaxes are found in Africa, and more refined handaxes are found in Africa, Europe, and Asia. The handaxe is usually oval or pear-shaped, and from three to ten inches in length. Even though it has the name of handaxe, it probably was used as an all-purpose tool.




Lower Palaeolithic tools: (a) abbevillian handaxe: (b) Acheulian handaxe; (c) cleaver

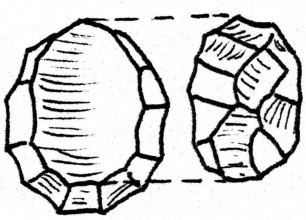
The handaxe is a core tool. Core tools are tools remaining after flakes have been struck off a stone.



In contrast with core tools are flake tools. Flake tools are tools made from the flakes struck off a stone. These flakes may or may not have further work done on them. Flake tools become characteristic of the Middle Paleolithic, Upper Paleolithic, and the earliest tools found in Alaska.

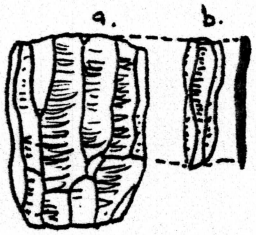
Middle Paleolithic (100,000 years ago to 40,000 years ago) Homo erectus by this period has evolved into Homo neanderthalensis. Also, the Levallois technique of producing stone flake tools was developed and used throughout this period. The two following examples show core tools that had been trimmed to the right shape so that it was possible to control the form and size of the intended flake.

Levalloisian flake tools:



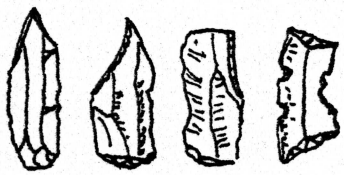
Using the Levallois technique, a variety of tools could be made.

Upper Paleolithic (40,000 years ago to 11,000 years ago) Homo neanderthalensis at the beginning of this period evolves into the Homo sapiens (the details of where and how this took place remains uncertain). By the beginning of the Upper Paleolithic the technique of producing many flakes from a core has been achieved. The following is the primary example of this process where blades are produced from a core.



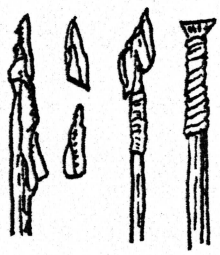

(a) core; (b) blade

Blades were usually further worked to produce specific tools. Examples are burins and are shown here.



(burins)

Burins were used to engrave bone, antler, ivory, and (presumably) wood. Other cores were developed to produce other predetermined flakes (e.g., wedge shaped flakes). In the Upper Paleolithic (and especially later in the Mesolithic) it became common to reduce flakes and blades much further to produce microliths. The following are examples.



Microliths hafted as arrows

Microliths are often less than an inch long. They served as barbs, tips of arrows, and were set into grooved hafts of bone, wood, and antler.

## Prehistoric Tools in Alaska

Most archeologists believe that the earliest tools used by man in Alaska or Beringia have not yet been found. Presently archeologists are searching for earlier tools used by man than those found to date. At this time there is well documented evidence that tools were used between 7,000 and 12,000 years ago in Alaska. Common among these tools were burins, scrappers, and microliths. These tools were similar in function to those used in cold climates of Europe and Asia. In Alaska (as elsewhere) during and after this period of time, there is increasing adaptation to local environments. Tools found in inland Alaska are different from tools found at coastal sites. Also, in the last few thousand years there is evidence that tools vary artistically from one region to another and through time, although the basic designs and functions of the tools remain the same..

Looking at a composite tool such as a harpoon with a shaft, foreshaft, harpoon head, and harpoon point, and comparing it to an Oldowan tool it is easy to see that man has made great strides forward in prehistoric times.

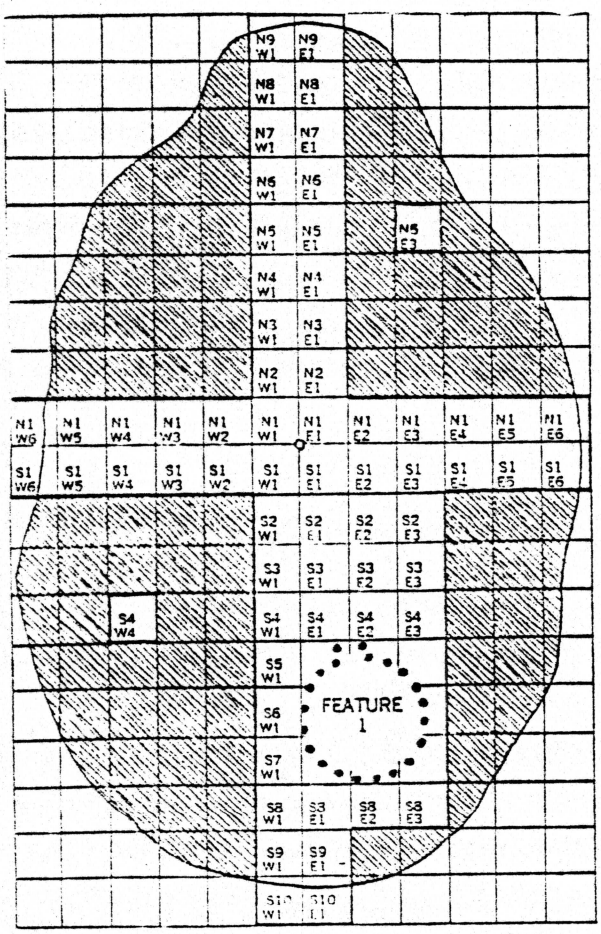
## An Archeological Dig

The archeologist may go into the field to survey land to fulfill requirements in a country's laws (the Alaska Pipeline corridor is an example); to answer questions posed by a research problem (looking for the earlier tools in Alaska which are now only assumed to exist); or to follow up on what a non-archeologist has found. Depending on the archeologist's task, he/she will do appropriate background research. In Alaska this might mean looking at historical papers to find out where people once

lived, or at geological maps to find out at what approximate times deposits were laid on the ground. The archeologist will survey the specified land (by foot, car, horse, plane, etc.) seeking remains of human activity.

The location where the archeologist finds this material is called a site. The site is numbered and recorded. Depending on the archeologist's purpose, he/she may want to excavate all or some of the sites found.

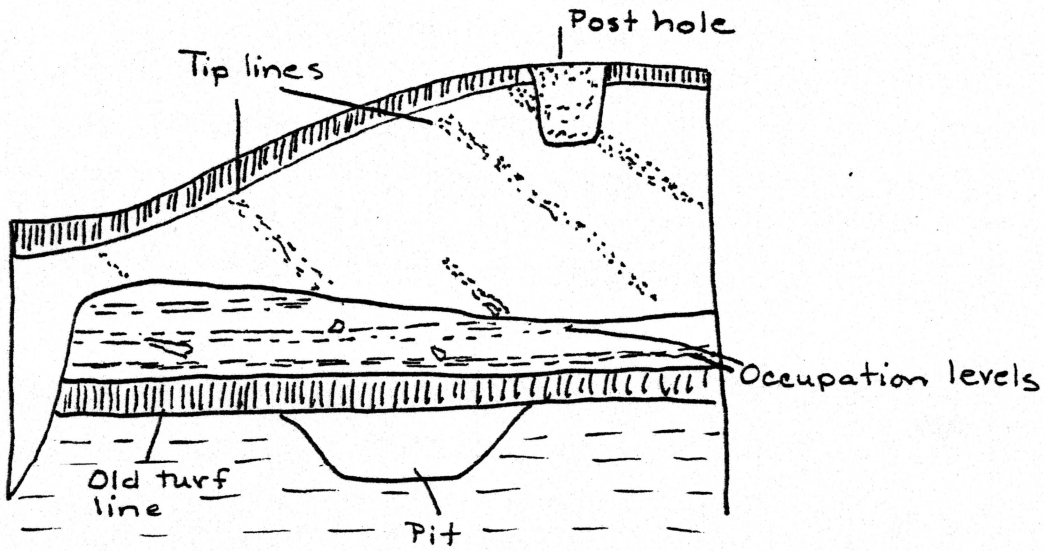
Generally, when the archeologist excavates a site a grid or partial grid is laid over the site. Usually string is laid out revealing square meters. The following is an example of a site with a grid laid over it.




A small site (shaded area) showing layout of grid control. House circle (Feature 1) is excavated as a unit. Numbered squares have been excavated. Taken from Deetz 1967:15.

In the preceeding example, a datum point is shown at the center. The datum point once established is from where the grid is measured and all squares identified. Also, the datum point can be located outside the site area. The datum point might be a cement block or large rock that is expected to lay there for many years. Digging takes place within one or more squares. Since the ground underneath a site has generally been disturbed by human activity, a control pit is usually dug away from the site. This allows the archeologist to record the natural layers of soil, if they can at all be distinguished. These layers build up vertically over time so that the lower layers are older. This principle of dirt building up on older dirt without one layer being inserted beneath a layer already there is called stratigraphy. There are exceptions to this law but these exceptions are generally observed and accounted for in the field.

The following is an illustration of stratigraphy:



Stratigraphy tells the archeologist which layers are older and which are younger.

The above section on the study of early man should be shared, to whatever extent possible, with the students. Time permitting, questions will be answered during the program. Students will be digging at an artificial archeological site and the concepts explained in the sub-section "An Archeological Dig" will be especially useful as background information.

# STUDENT BACKGROUND FOR
# AN ARCHEOLOGICAL DIG

How do we learn about ancient people who lived before books were written and records kept? One way we can learn is that nature, over many years, can help preserve things people leave behind. People leave behind things either when they move away or die. One way nature helps is that wind can blow dirt over a campsite fire and help preserve charcoal left after the fire died out.

The major way we learn today about things left by ancient people is by digging the ground and searching for these things. The people digging then write about the people who lived there long ago and what they left behind. This is called archeology. Archeology is the study of people through what they have left behind.

The things made by persons and later found by archeologists are called artifacts. One way an archeologist finds artifacts is to survey land and look for artifacts or some evidence of the past presence of man. For example, the dirt on the side of a river bank may fall into the river and uncover an artifact which allows a person or archeologist to find it.

The location where the archeologist finds artifacts is called a site. When you come to the Alaska Studies program, there will be a site set up where you and your classmates will find artifacts. The information in this hand-out will help you be prepared to learn about the people who made the artifacts.

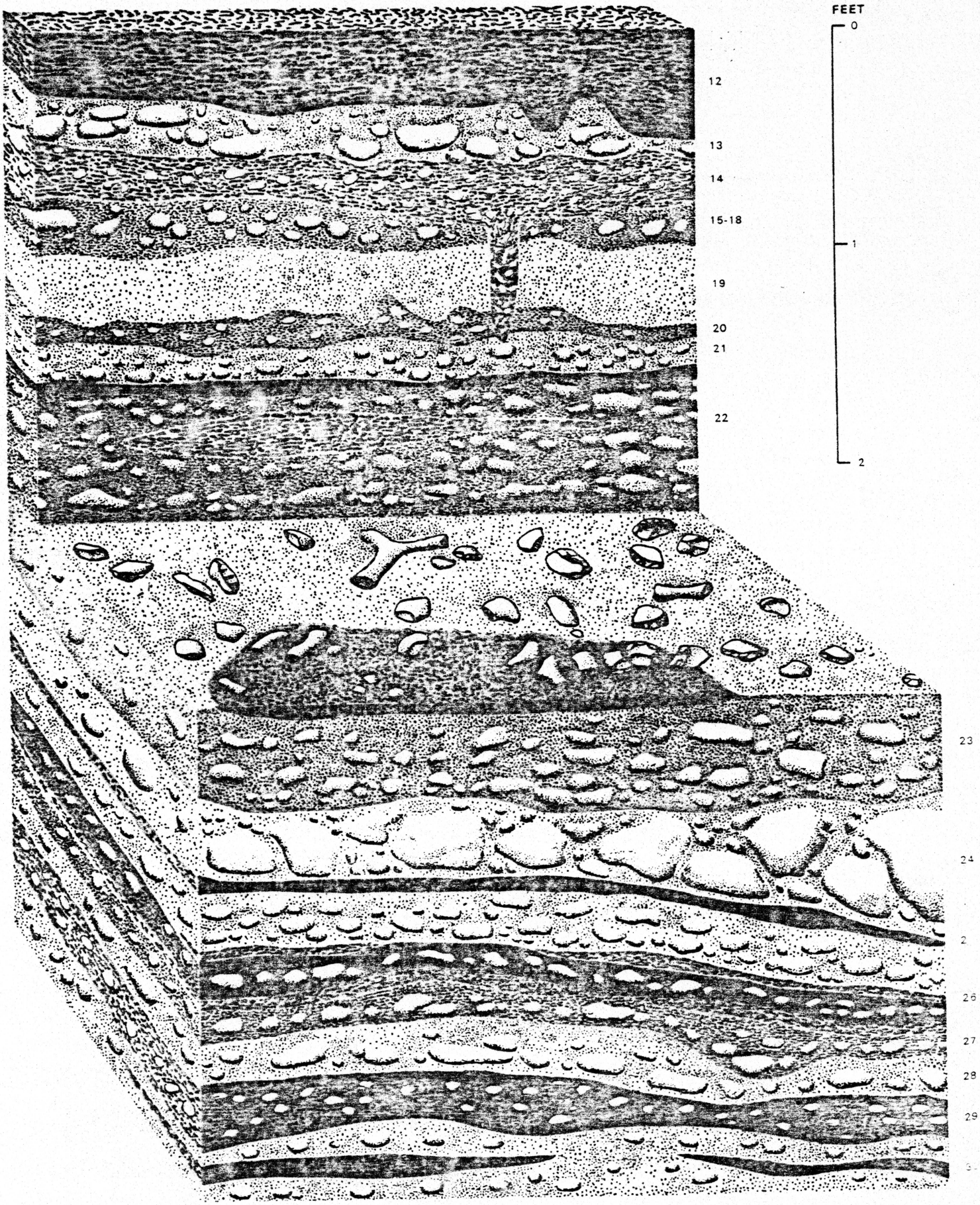
The following picture shows an archeologist and students digging at a site.

The string lying across the site allows the archeologist to label each square and to know where in the site artifacts are being found.

Each artifact is recorded in a field notebook. The square in which the artifact is found and the depth from the surface is also recorded. Also, notes about the artifacts are recorded. Notes might be about where the artifact is in relation to other artifacts or how the artifact might have been used by its makers.

The depth in which the artifact is found is important. Generally, the deeper down the artifact, the older the artifact is. This is because over hundreds or thousands of years the wind deposits newer dirt on top of older dirt. (The wind does not lift up the top layer of soil and thus, cannot deposit fresh dirt underneath.) This rule is called stratigraphy. When digging down into the ground, it is common to find different layers of dirt. According to the rule of stratigraphy, the artifacts found in one layer of dirt are older than artifacts found in a layer above it, but younger than artifacts found in a layer below it. Sometimes there are exceptions to this rule, but usually the archeologist can detect the exceptions at the site.

The following picture shows many layers of soil. It is easy to see one layer at which people left artifacts.




Taken from Howell 1965:138

# INTRODUCTION TO STRANGER'S PLAY

The narrated play "The Strangers" is the final activity of the program "The Development of Man in Alaska". It attempts to re-create the actual meeting between the Aleuts and the first group of Russian fur trappers (promyschleniki) in 1745 on one of the Near Islands. The play was adapted from two booklets entitled "Strangers" written by Pat Partnow and published by the Alaska Native Education Board.

The play is intended to show what can happen when two groups of people with radically different backgrounds and goals meet. Alaska Native Studies will conduct extensive discussions of the play as it develops. Therefore, we ask that you not worry about the students understanding the play.

The two story teller parts are quite lengthy and those students are not expected to have their lines memorized, but should read through the play several times. Be sure the story tellers can read the lines without a lot of hesitation or problems. You should provide any scripts your students need for any of the parts. It should be pointed out to your class that the story tellers are speaking as people who were there as the events unfolded.

The other actors in the play should memorize their lines as well as familiarize themselves with any actions their parts call for. In other words, they must understand what they are to do and when they are to do it.

We have included a list of props we will provide, as well as the room layout. Once again, students should understand, for example, that when a drum is to be used -- they will use it! We suggest that the story tellers be assigned the role of prompters, as well.

"THE STRANGERS"

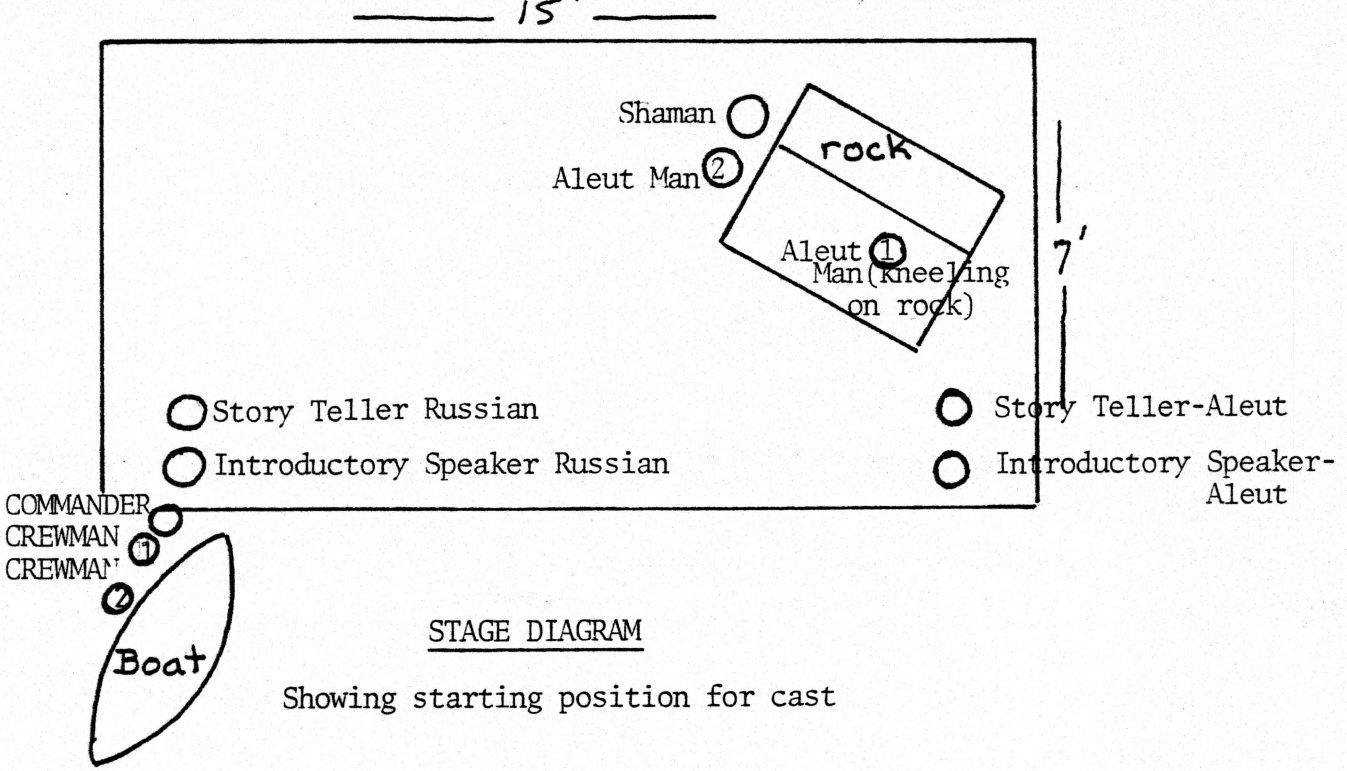
CAST

RUSSIAN SIDE

Introductory speaker
Story teller
Commander
Crew men (1)
Crew men (2)

ALEUT SIDE

Introductory speaker
Story teller
Aleut Man (1)
Shaman
Aleut Man (2)




STAGE DIAGRAM

Showing starting position for cast

AVAILABLE PROPS

wooden muskets

basket

binoculars

drum

package of needles

skins

pipe

staff

spear

## SCENE I

(To begin the play -- all the characters should be in their place on stage).

Introductory Speaker for the Russian Side

The Russian story teller has been trapping in Siberia for ten years. Several months ago he heard reports of a new group of islands to the east, close to the American continent. This new land is said to be rich in fur-bearing animals. This is a good time for making money on furs. Furs can be traded to China for tea, silks and spices. These things can be sold in Russia for high prices.

So he got a job on a ship sailing for America. The voyage so far has been short but dangerous. The weather has been good but the crew has been told that it can change very quickly. The story-teller and his fellow trappers are prepared to deal with one other problem, the Aleuts. The Aleuts will probably be useful to the Russians for they will know how to hunt. Even if the Aleuts aren't willing to help the Russians, the Russians have their muskets to force the Aleuts to help.

Introductory Speaker for the Aleut Side

The Aleut story teller has lived on an island in the Aleutians all his life. He is married and has a young son.

Like the other men on the island, he is a good hunter. He handles his baidarka well and has a sharp eye for spotting sea mammals. But he is most respected for his skill inventing new tools and toys. He often makes tools for people.

The villagers have gathered a lot of food during the summer. The chum salmon run was heavy and his family had dried many fish for the coming winter. Berries have been picked and stored in seal oil for the winter. Soon the Islanders will depend on these stored foods for use in the winter. Preparations for the coming winter are interrupted, however, by the arrival of the Russians.

(Introductory speakers should step off stage and join the audience.)

SCENE 2

Story Teller Russian — We'd only been sailing for six days when we passed the first American Islands. We were looking for a good place to anchor the ship.

Commander — Let's go past this island and look for a better place to anchor.

Story Teller Russian — We had been expecting to see Americans, but so far we had seen no sign of human life.

Story Teller Aleut — We had recently returned from fish camp and were busy recovering the barbaras with rye grass.

Aleut Man 1 — Whale on the horizon! (perched on top of the rock looking out over the ocean).

## SCENE 3

Story Teller Russian — We soon saw a second island. The mate looked through the glass (crewmen #1 should pick up the binoculars and look toward shore) and beckoned the Commander to look for himself. The two men talked for awhile.

Commander — Steer for that island (points at the land). We'll anchor there and send the small boat ashore to explore the area for signs of furbearing animals. If the hunting looks good, we'll stay for the winter.

Story Teller Aleut — We men all ran up to the top of the hill for a look. (Aleuts all step up on rock) If it were a whale out in the ocean, we would begin the hunt right away. Our baidars were ready for just such a chance.

Once on top of the hill we looked out onto the ocean. There in the distance, just as the lookout had said, was a very big creature. It was the size of the right whale, but it swam on top of the water, not in it, and it had white wings raised like a bird.

## SCENE 4

Story Teller Russian — As we approached the island, we all looked closely at the shore. For most of the crew this was their first look at the new world. Sea otters, the animals that would make us rich, dove under water as we approached. Still we saw no sign of human life.

Story Teller Aleut — As the creature swam closer to the islands, we saw that it was not a whale and it was not a giant bird. It was a huge boat with many men inside.

Aleut Man #2 — Let's stay hidden until we learn who these people are and why they are here.

Story Teller Aleut — We sent the women and children home to gather their belongings in case we had to hide from the strangers.

Aleut Man #1 — I wonder where these men came from for there is no place on the island where a person could find so much wood. Maybe they're from the land to the east where it is said that wood grows like grass.

DISCUSSION DURING PROGRAM

## SCENE 5

(Speaking to the two crewmen)

Russian Commander — Anchor the ship and lower the small boat. I want some of you to row to shore.

Story Teller Aleut — As we watched, the men lowered a smaller boat into the water from the side of the big one and a few of the men climbed into it. (both crewmen climb into the boat)

Story Teller Russian — Halfway to shore we found ourselves stuck in a large kelp bed so thick that one person had to reach out in front of the boat and cut the kelp away to allow the boat through. (Crewman #2 leans over the front of the boat and pretends to cut through the kelp). Birds continued to play around us but the sea otters were more cautious. They must be used to hunters. Once ashore our orders were to search for fresh water and signs of foxes or other furbearing animals.

## SCENE 6

Story Teller Aleut — The strangers paddled their boat into shore. (Russian Crewmen should pretend they are paddling). As they stepped onto the beach, they looked carefully up and down the shore line. (Crewmen step out of the boat onto the stage and look both directions).

Story Teller Russian — Our scouting party did not find any signs of animals. We were only on the island long enough to find a fresh water stream. The bones of salmon lay in the shallow pools of the stream.

Story Teller Aleut — The men stayed on land for only a short time. They walked over to our salmon stream and tasted the water. (Crewman #1 bends down and pretends to drink water from a creek). We wondered if they were going to try to claim the stream for their own use. Surely they must know they did not have the right to fish in territory that was not theirs.

Story Teller Russian — We also found a broken bone point by the stream. Lying near it was a woven grass bag. (Crewman #2 picks up the bag and shows contents to Crewman #1) We looked inside the bag and found pebbles with grooves worn around their middle and some more bone points.

Crewman #2 Let's take these back to the ship to show the Commander.

Story Teller Aleut We watched as they picked up a grass bag I had lost the day before. Then the men went back to the bigger boat carrying our things with them. (Crewman get back into small boat). The large boat remained in the cove all afternoon but nobody came ashore again.

Aleut Man #1 Let's go back down to the village but first let's post a look out to watch the strangers in case they're planning to attack us in the night. (Aleut Man #2 should climb up on the rock to act as lookout).

## SCENE 7

Story Teller Russian — Once we were back at the ship we showed the Commander the artifacts we had found. (two crewmen step out of the small boat and show the Commander the contents of the bag).

Commander — I want all of you men to stay on the ship until we find out if the Americans are war-like. I don't think we have to worry too much because the Americans don't have any firearms.

Story Teller Russian — We lay at anchor in the cove all night long. We saw no sign of the Americans.

Story Teller Aleut — The rest of us gathered for a meeting in the chief's barabara. (Shaman and both Aleut men sit facing each other on stage) We talked for a long time. We all agreed that the people from the big boat had not acted like enemies.

And we all agreed that they had not acted like friends either. Friends would have paddled ashore all together to let us know they meant no harm, and would have come into our barabaras and eaten with us. We didn't know what to do.

Aleut Man #1 — Let's ask the shaman to help us.

(The Shaman agreed to help)

Story Teller Aleut — (Aleut Man #2 should beat drum softly). An assistant began a steady beat on his drum, calling for the spirit helper, and the Shaman began a circular dance in time with the beat. (Shaman should begin dancing around the Aleut men) Suddenly the Shaman let out a great yell. He shouted words in a language we could not understand. This was the voice of his spirit helper, speaking through him. We knew the Shaman would tell us the spirits words later. (Shaman sits down again)

Shaman — I want you to stay up all night without eating. In the morning you should arm yourselves for war and wait on the beach. If they have come as enemies, you will attack them on signal. If they have come as friends and offer gifts to prove it, you will return the kindness with gifts of your own.

Story Teller Aleut — When all of the men were ready, we told our wives, children, and old people to hide in the hills until the strangers were gone. We then walked to the beach. (Shaman and Aleut men should walk to the edge of the stage carrying spears)

DISCUSSION DURING PROGRAM

## SCENE 8

Story Teller Aleut — In spite of our misgivings, the day began well. Counting our relatives who had come from the other villages on the island, we out numbered the invaders.

The strangers saw us from their boat, but for a long time did nothing.

Story Teller Russian — At dawn over a hundred Americans appeared on shore. They carried short spears and knives. They wore seal gut or birdskin coats and their faces were painted red and blue. They shouted, sang, and waved for us to come ashore. (The Aleut men wave for the Russians to come ashore).

Russian Commander — (Speaking to the crewmen). I want all of you to stay on the ship. If the Americans want to talk to us they can come to our ship.

Story Teller Russian — Several hours later, the Americans were still on shore. The Commander finally ordered the small boat lowered into the water. He and two others rowed to shore. (Russians climb into boat and pretend to row ashore.

Aleut Man #2 — Look! Some of the men are climbing down the side of the big boat into the smaller one. They must be coming ashore.

Story Teller Aleut — They paddled in toward us and as they came nearer, we called to them. They called back and we realized they did not know our language.

Story Teller Russian — From where I stood on the ship I could see the Commander speaking with the Americans. We later learned that the Americans could not speak our language. When they got close to the shore, The Commander (throwing package up onto the stage, Aleut man #1 catches it) threw a package of metal needles ashore and one of the Americans caught it. They seemed to understand that this was meant as a peace offering. They threw back some skins. (Aleut man #2 throws a skin back to the Russians).

Story Teller Aleut — When they got close to shore, their chief threw some smooth shiny needles to us. These needles were shaped like ours, but were of a different material. We in turn threw some skins back to the strangers. They smiled at us, (Russians wave and then pretend to paddle back to the big boat) waved and paddled back toward the big boat. Our shamans advice had been good. We left a lookout on the hilltop and the rest of us went to the barabaras to talk and plan for the next day. (Aleut man #1 steps up onto the rock).

Story Teller Russian — The first meeting had been peaceful with gifts from both sides. Maybe there would be no fighting after all.

## SCENE 9

Story Teller Aleut — The next morning we were still a little cautious and very curious. Soon after we arrived on the beach, the strangers put their small boat into the water and paddled toward us. (Russians climb into the boat with their muskets).

Story Teller Russian — The next morning we could see the Americans on shore again. This time the Commander ordered the boat to be lowered right away. We carried our empty water casks, as well as some gifts and the muskets.

Story Teller Aleut — Again we exchanged gifts. The newcomers gave us a long spoon-like object with fire in the bowl. (Aleuts and Russians hand each other the gifts mentioned). (Russians show Aleuts how to use pipe). We gave a beautiful carved dance staff to them. Then the invaders started to act very strangely. We could see that each man had another gift in his hands for they all held long stalks. Yet they refused to give us these gifts. This hurt our feelings.

Story Teller Russian — Once we were all on shore, the exchange of gifts began. The Commander presented the man who appeared to be chief with tobacco and Chinese pipes and showed how they were used. In return, he was given a stick with a seal head carved on the top. Then the Americans pointed to the muskets. (Aleut man #1 points at musket). They seemed to want us to give them one. I gripped mine tightly.

Story Teller Aleut — Our chief pointed to the stalks but the strangers backed off and pointed them at us. My cousin leaned toward one of the strangers and touched his staff. (Aleut man #1 should grab the musket of the Russian crewman) The stranger drew back. The two men began struggling. (Aleut #1 and Crewman #1 struggle back and forth)

Story Teller Russian — The Americans became angry as they realized that we would not give them our guns. One of them grabbed the crewman's musket and he tried to jerk it away from him. He wouldn't let go. The crewman tugged harder but he held on even more tightly. Finally the crewman shouted at him and they scuffled.

Commander — Fire!!

Story Teller Aleut — Then suddenly -- boom -- louder than a volcano. A great noise burst from the staff and threw us all to the ground. (Aleuts should fall down on the stage). Noise was not all that came from the stick. It also shot fire which tore the skin from my cousin's hand. (Aleut man #1 should act wounded)

Story Teller Russian — An American screamed. The rest froze. The screaming man lifted his hand and stared at it in amazement and shock. (Aleut man #1 should raise hand so the others can see it) Blood gushed from the hand. It had been hit by the musket shot.

(Scene #9 con't.)

Story Teller Aleut — We rushed our injured friend to the water to wash off the blood and in the confusion the strangers jumped into their boat, (Russians get back into the boat). (Aleuts bend down on the edge of the stage and pretend to be helping their injured friend) and paddled back to their ship. We paddled after them and when we got close to the big boat we hurled our spears at them. We knew our spears were useless against the big boat, but what else could we do?

Story Teller Russian — In the confusion that followed we jumped into the boat and rowed quickly back to the ship. We saw Americans paddling swiftly toward us in their skin boats. A dozen slim, short spears were thrown at our ship but they bounced back into the water. (Aleuts pretend to throw spears. We quickly sailed out of the cove back to the first island we had seen.

Story Teller Aleut — The big boat lifted it's wings and headed toward Attu. We hoped our friends on that island would beware of the strangers. We later learned that they were not as lucky as we - some of them were killed by the fire from the staffs.

Story Teller Russian — We quickly defeated the Americans on the first island and began the business of trapping. We spent the entire winter there, and caught a large number of foxes and sea otters.

DISCUSSION DURING PROGRAM

TIME SCHEDULE

FOR DEVELOPMENT OF MAN PRESENTATION

| | |
|---|---|
| Seating - Introduction | 5 minutes |
| Beringia Presentation | 5 " |
| Ice Age Mammals and Fauna | 10 " |
| Teeth and Bones of Extinct Animals | 20 " |
| Mans Migration Routes | 5 " |
| Hunting Play | 5 " |
| Bathroom Break (3rd grade only) | 5 " |
| Development of Prehistoric | 10 " |
| Tool Technology Archaeological Dig Site | 30 " |
| Strangers Play | 20 " |
| Summary and Final Questions | 5 " |
| TOTAL | 2 hours |

# BERINGIA PRESENTATION

MATERIALS: 12"x8" map showing North America, the Chukchi Peninsula, Beringia, and the Wisconsin Ice Sheet.

## PART I

## BERINGIA

This portion of the program begins with a brief review of information given in the pre-activities. (pages 6-8 ) The process of glacial formation and a basic understanding of Ice Ages are reviewed through questions asked of the students. Location is clarified using map recognition questions, i.e. What continent is this?

Answer: North America.

LECTURE: (using map)

About 70,000 years ago the earth's last ice age began. It was called the "Wisconsin-Würm" glaciation. The white area on the map is the part of North America which was covered by the ice.

Question: Where did the water come from to make all that ice?

Answer: The ocean.

Question: What happened to the sea level?

Answer: It dropped 400 feet. (elaborated on by discussion.)

Now this area between Alaska, here and Siberia, here (indicate brown area on map) is only 120 to 300 feet below sea level today.

Question: If the oceans dropped 400 feet during the Wisconsin-Würm Ice Age what happened to this area?

Answer: It was uncovered, and above sea level.

That's right, in fact, this area was above the oceans periodically for about 60,000 years. It includes Alaska and this part of Siberia (indicate on map). It's more than 1,000 miles from its Northern border to its southern border. This area was larger than Canada is today and is known as the continent of Beringia. (Have class say Beringia).

Beringia was a flat, windy, plain which was quite cold and dry. The only plants that could survive there were probably hardy grasses and brush. There were probably no trees. Some of the animals which were trapped by the glaciers here (indicate Alaska's Interior) and here (indicate Chukchi Peninsula) eventually moved out into this area. Over time some of the animals from Alaska ended up in Siberia and some from Siberia ended up in Alaska. Some of the better known animals which came from North America were the horse and camel and from Siberia came the woolly mammoth and the bison.

Any questions:

Have students turn to face charts of Ice Age Mammals, introduce speaker.

MAMMOTH PRESENTATION

The mammoth appeared in North America about 500,000 years ago. The mammoth were wanderers and able to adapt themselves to different climates. They lived on the plains and adjacent to forests. Their diet was grass, flowering plants and herbs. Because they ate vegetation near the ground, they are called "grazers." Bodies of mammoth have been found well preserved in perma-frost in Siberia with remains of leaves and plants in their stomach.

The mammoth is an ancient member of the elephant family. They were enormous, shaggy creatures and resembled the elephant, but were much larger and huskier. Their height varied from eight to twelve feet at the shoulders. Because of the extreme cold weather, the mammoth coat was thick. The outer hair was about twenty inches long, dark reddish-brown and coarse. Inner layers were short, greyish-blond and woolly. The ears were small and covered with hair. The tail was shorter than the elephants and had a tassel of long, bristly hair at the end. The most outstanding feature was huge curly tusks that projected into the air in a semi-circle. The largest tusks found were thirteen feet and seven inches long and weighed one hundred and eighty-five pounds. These cumbersome tusks made it impossible to reach the vegetation on the ground. Therefore, the trunk was very important for plucking up the grasses, plants, and herbs and also to drink water. These large animals were called grazers because of their diet of grass and herbs.

## MASTADON PRESENTATION

The mastadon was also of the elephant family. Although they closely resembled the elephant, they were shorter in stature, but stockier and heavier. Their skull was large, and rounded with a short neck. Their height varied from nine to ten feet tall.

The mastadon lived in the forest lands and lived off the leaves and bark of the trees. Animals who eat these foods are called "browsers". Their heavy hair was much like the mammoth but dark brown in color. The tusks projected out of the upper jaw and curved slightly. Scientists think that they may have been used to dig roots.

## BISON PRESENTATION

Prehistoric bison bones are found in many parts of Alaska. There are many more bison bones found than bones of previously mentioned animals. They lived on the plains and ate grasses and flowering plants. They were grazers.

The early bison looked much like the bison of today, but were larger and stockier with long, brownish-black hair. The shaggy, huge head was one-fourth the size of the rest of the body. The horns varied in size from around four to six feet across from tip to tip. These pre-historic animals were important to the early people. They were used for clothing, shelter, food, tools, and kitchen utensils.

THE HISTORIC HORSE PRESENTATION

Most of our early animals migrated across the land bridge except for the horse and camel. They originated in North America and eventually migrated to the Old World.

The earliest horse was Eohippus, a small, dainty creature; about the size of a fox with a narrow head that looked like a deer's head. Their feet were different from the modern horse. Instead of hoofs, they had four toes on the front feet and three on the back. Each toe had a small hoof.

Our earliest horse was a forest animal and lived off of soft leaves and fruit. They were called "browsers". Because of the changes in climate, swamps and forest were giving way to grassy plains, and our earliest horse evolved into "Mesohippus".

Mesohippus, was larger, about the size of a Collie. This horse was known as the "middle horse". Its feet were beginning to change in appearance. Instead of four toes there were three on each foot. Also, the middle toe was now wider and longer than on the first horse. During this time Mesohippus ate grass and leaves.

Our third horse, "Equus", looked much like the modern horse and lived more recently in time. It was larger than the Eohippus and Mesohippus, but smaller than today's horse.

SABOR TOOTH TIGER PRESENTATION

The saber tooth tiger, or cat, followed the animals on which he preyed, the mammoth, mastadon, bison, and horse. The saber tooth tiger lived off the flesh of other animals and because of this it is called a "carnivore". The saber tooth tiger is an extinct member of the cat family. The scientific name for this animals was smyeloden, which means carving knife teeth. He resembled the mountain lion and tigers. The body, however, was larger and stockier than today's lions. The legs were shorter. The neck had the appearance of a mane. The fangs were impressive; they are six inches long and shaped like a saber, or dagger. The jaws could open up to 90° like a serpent. The long fangs gave them the ability to hunt the thick skinned animals of that day.

Presentation of

## TEETH AND BONES OF EXTINCT ANIMALS

Present are a small mammoth tooth set inside gum tissue, a cast of a mastadon tooth, a femur bone from an adult (or near adult size) mammoth, the upper skull portion including the horns of an extinct bison, a femur bone of an extinct horse (Equus) and a shoulder blade of an extinct horse. (The shoulder blade is optional.) There are skeletal diagrams of the mammoth, bison, and horse. A drawing of the mammoth on grass and the mastadon near a bush or tree is also present (this drawing is also used in the prior presentation.)

## MAMMOTH TOOTH SET INSIDE GUM TISSUE

This mammoth lived only to a young age and died. Perhaps, a sabor tooth tiger killed it, or it died of disease or other natural causes. The tooth and gum tissue was buried by dirt. This would take place over hundreds and thousands of years. Perhaps there was flooding and other natural causes that played a part in depositing dirt over the remains. What happened with the tooth and tissue in the ground was: 1) The tissue which was pink and soft, like in our mouths, became hard like bone or petrified wood. This happened because minerals in the ground were absorbed by the tissue, and this hardened the tissue. 2) The tooth, gum and bones which we will see later, were once white and pink in color, like our bones, teeth and gums. While they were in the soil they turned brownish in color. This happened because chemicals and acids in the ground were also absorbed over a period of time by the remains. This gave them their brownish color. Tannic acid comes from trees and is one of the chemicals that makes the remains brownish

in color.

How did the mammoth live and eat food? (The drawing of the mammoth on the grass and the mastadon near branches and leaves is now used.) The mammoth may have used his tusks to clear snow away from the ground. He used his trunk to gather in grass. The ridges on his teeth (here) were ideal for grinding down grass so he could swallow and digest it. Over a period of time this tooth, differing from our teeth, wore down and became shorter and closer to the gums, and finally fell out. While this was happening, a second tooth was forming (here) on the underside of the gum and would come through the gum and take the place of the first tooth. As the mammoth was growing up, its head and jaw were becoming very large so that as the second tooth was coming in it was larger than the first tooth.

An interesting thing about the mammoth was that it got five or six sets of teeth during a normal life time. We get only two sets of teeth, our baby or milk teeth, and our permanent teeth. The mammoth got more sets of teeth. As the mammoth was growing, the second tooth would be larger than the first tooth, and the third tooth would be larger than the second tooth (point to about two inches beyond the tooth in the jaw). The fourth, fifth and sixth teeth were also becoming larger so that the biggest teeth were about a foot long and four inches wide.

A second interesting thing about the mammoth was that it only had four teeth in its mouth. We get about thirty teeth in our mouths. However, the mammoth only got four teeth in its mouth, one on each side of the jaw (point to these areas), and one on each side of the mandible or upper jaw. This tooth came from this side (point to which side) of the mandible (or lower jaw depending on the specimen).

When we find a tooth in the ground like this one with these (small) ridges on it, we know the animal (in this case the mammoth) was able to eat grass and plants. Animals that eat grass from low off the ground, like this, (point to the grass in the drawing or move a hand low near the floor) are called grazers.

MASTADON TOOTH

Another similar looking animal, but with a different type of tooth was the mastadon. The mastadon did not live in the open grazing lands like the mammoth, but lived in brush and forested lands. To live in these areas, the mastadon had a different type of teeth. He was not eating grass, but harder foods such as leaves, twigs, bark and possibly roots that had been dug out of the ground with the tusks. This tooth is just one tooth and these high points (here, pointing to them) are called cusps. These cusps are lined up in pairs forming deep ridges. This was ideal for the mastadon; he was able to pierce down on the hard food using opposing teeth, and thereby, making a mash of the food so that it could be swallowed and digested. Animals who eat higher up off the ground like mastadons, who used this type of tooth, are called browsers. As you can see based on the type of teeth we find, we can learn quite a bit about the animal. Now we will look at a few of the bones of these extinct animals.

MAMMOTH FEMUR BONE

(Point to the mammoth skeleton diagram) Can someone tell me to which animal this skelton belongs? The first bone we will look at is (point to femur bone in the diagram) the mammoth's femur bone, and we can first

see the ball part of the femur bone and how it fits into the pelvic socket. (Lift the bone and show the class the ball part.) This allowed the mammoth to move his leg in a fashion similar to ours. (This can be demonstrated.) The bottom area of the femur bone is attached to the knee. You can see the swivel area at the bottom of the bone. This allowed the mammoth to bend his leg at the knee similar to the way we can move ours. (This can also be demonstrated.)

You can get an idea of how huge the mammoth was by imagining that if the animal were alive today his femur bone would be this high off the ground (lift the bone straight up with the knee area of the bone being waist high or a little higher). Also, you can imagine the muscles the mammoth had to surround the bone to hold it in place. It had fat, skin and hair surrounding the muscles to protect the leg. The leg then supported many bones and parts of the body above the leg (motion to area above the leg). The mammoth is ten to twelve feet tall as an adult (this ceiling is _____ feet tall).

UPPER SKULL WITH HORNS
OF AN EXTINCT BISON

(Point to the bison skelton diagram) Can someone tell me to which animal this skeleton belongs? We will look at the upper skull portion including the horns of an extinct bison (while saying this point to the specific portion of the skeleton). (Hold up the skull to the class.) You can see the eye sockets. Here is the forehead, and back behind the forehead is where the brain would be. You can see what once was the soft tissue in the brain area.

The bison did not have a face like ours that extended down from the forehead. The face and head extended outward, and the lower jaw extended outward under the rest of the head. The bison's head was large for it size.

FEMUR BONE OF AN
EXTINCT HORSE (EQUUS)

(Point to the horse skeleton.) Can someone tell us to which animal does our last skeleton belong? (Hold up the bone.) Can someone tell me which bone this is?.... You can see that the horse's femur bone was quite a bit smaller than that of the mammoth. This was partly because, the extinct horse was much smaller than the mammoth; and secondly, the horse had three long bones to cover much of the distance in his leg (point along the horse's leg) while the mammoth only had two long bones. Here was the horse's knee (demonstrate by pointing), and here was the horse's ankle. For humans, this whole area would be part of the foot on the ground, but not for the horse. This long bone was the metatarsal bone and it is very short in our foot, but had grown long and was one of the long bones in the horse's leg.

## PART II

## MANS MIGRATION ROUTES PRESENTATION

We have discussed some of the animals that lived in Beringia. Most of them were browsers and grazers but there were a few meat eaters as well. We have mentioned the saber toothed cat already. There were also wolves and humans. The people of that time probably looked much like the people of today. They were hunters living off the big animals, like the bison and woolly mammoth.

Scientists have several ideas about how people got into North America. They came from this direction (indicate Siberia) and probably followed the game animals into the Interior of Alaska. It probably took thousands of years for the people to cross because they were only following game animals, not crossing a bridge. Remember Beringia was a continent. Once the people reached Alaska they were stopped by the ice here (indicate ice pack). However, five or six times during this ice age the ice melted out here (place corridor overlay on map) allowing animals and people to filter through to the lower part of North America. From there they spread out through North and South America. These first people were the ancestors of the American Indian tribes.

Another group of people probably lived along Beringia's southern coast. These people could hunt the big game animals but they could also get things to eat from the sea. When the ice finally began to melt it left a beach about twenty miles wide along the coast here. (indicate area on map - Northwest coast.)

These coastal people may have moved along this beach until they reached the area where California is today, There they could turn inland.

The last group of people to cross Beringia probably came along the upper coast. They may even have come by boat after Beringia was covered with water. These people spread along Alaska's coasts, Canada's northern coasts and out onto the Aleutian Islands.

Question: Who lives along our coasts today and hunts the sea mammals?

Answer: Eskimos

Question: Who lives on these islands? (indicate Aleutians)

Answer: The Aleuts

So, the ancestors of the Eskimos and Aleuts were probably the last group of people to come over.

Questions

HUNTING PLAY

See pages 9 - 13 of pre-activities

DEVELOPMENT OF

PREHISTORIC TOOL TECHNOLOGY PRESENTATION

(This section of the program followed the hunting play.) The speaker begins this section by pointing out that parts of the hunting play were based on archeological evidence (see the Ambrona and Torrelba site in Howell 1965) and that something like the hunting play actually took place a very long time ago (roughly 200,000 years ago). It is then pointed out that we have learned much about early man because stone tools preserve well in the ground, and that other materials like bone, and wood, and especially leather, and soft tissue usually do not preserve well, and disintegrate in the ground.

The speaker then tells the students about how man came to develop stone tools, and makes an analogy: just as the horse got taller over time (as the students learned earlier) so did man; and more importantly man's brain also became much larger over time. At one time man (or an early hominoid) only grew to four and one-half or five feet tall as an adult, and, more importantly, man's brain was only one-third the size it gets today (at that time the cranal capacity being roughly 400 to 600 cc's for possible hominoids). At this time man made the first and simpliest kinds of tools, the pebble tools (see page 92 of post-activities).

The speaker then shows the students rough examples of an Oldowan or pebble tool, an Acheulian handaxe (page 93 of post-activities), a flake tool (either the Levalloisian flake tool on page 93 or the blade tool on page 94 of the post-activities can be used as examples), and a microblade (page 95 of the post-acitivties). The speaker points out that it was probably not until some time after man learned to make the microblade

(roughly 40,000 years ago) that he first came to Alaska (see pages 95-99 of the post-activities). The main point the speaker makes in this section is to show how tools were first simple, and then become more elaborate and sophisticated over a period of time.

## ARCHAEOLOGICAL DIG SITE PRESENTATION

40 minutes total

A 4' x 6' canvas map of the state of Alaska has the following archaeological sites marked:

(1) Dry Creek
(2) Ground Hog Bay
(3) Onion Portage
(4) Anangula Island
(5) Cape Krusenstern

The map is located above the back wall of the archaeological site. The site is an 8' wide x 22' long x 4' deep pit. It was created by framing in a 8' x 22' area on three sides and then building a 4' high x 7' wide x 22' front platform along the fourth side. Students climb up steps to the top of the platform which is depicted as the ground level. Students, then, are looking down into an archaeological site just as if it were an actual hole for a real site.

Inside the pit five boxes (each box was 2' x 3' x 1' deep) are scattered around the pit at different elevations. Each elevation indicates a different soil layer. This is reflected in different types of soil in each box.

This section opens with a general discussion of geo-facts and artfacts. The five marked archaeological sites are pointed out and discussed (see pages 85-91 ) Onion Portage is talked about last and is elaborated upon. Stratigraphy is also talked about in conjunction with Onion Portage. Finally a discussion of archaeological methods is conducted as well as a demonstration of the use of a trowel and brush in removing artifacts.

The class was then broken down into five groups with each group assigned to a box. A staff member is also present at each box. The

students first must uncover the three artifacts that are buried in each box. Rubber spatulas are used to prevent damage to the real artifacts being used. Once all the artifacts in a box have been found, the students fill out the attached form (see page 66 ). The students are encouraged to put down all the answers suggested and not to try and agree on one consensus answer. After a group has completed their analysis of the artifacts, a staff member reviews the answers with the group. Any missing information is supplied and any inaccuries are corrected. The artifacts that were used in our site were selected to provide exposure to a variety of materials used for tools and the types of tools used by early man in Alaska.

The following list are the artifacts we used.

Box 1
(1) Obsidian Core
(2) Stone arrowhead
(3) Stone adze head

Box 2
(1) Ivory fish sinker
(2) Stone net sinker
(3) Small stone semi-lunar knife

Box 3
(1) Large ivory toggle-head harpoon
(2) Ivory ice chisel head
(3) Ivory seal skin poke plug

Box 4
(1) Walrus tooth bola
(2) Small ivory toggle head harpoon
(3) Stone spear head

Box 5
(1) Bone-harpoon foreshaft
(2) Bone barbed harpoon point
(3) Large moose leg bone scraper

After all the groups had finished reviewing their material with a staff member, each group sent a person to the platform to explain one of the artifacts from their box. Students were then allowed to circulate and look at all the artifacts from each box.

Following several minutes of browsing, the students left the dig site and moved to the other side of the room to present the play "The Strangers".

| Name of artifact | Wi... ...ter... ... the artifact? How was the artifact made? | How was the artifact used? | How old is the artifact? |
| --- | --- | --- | --- |
| | | | |
| | | | |
| | | | |

STRANGERS PLAY

See pages 29-45 of pre-activities

DEVELOPMENT OF MAN IN ALASKA

STRANGERS PLAY - DISCUSSION

After scenes 4, 7, 8, and 9 the teacher tries to involve the students in discussions. This is done by asking questions which pertain to the important points which are made in the play. The following is a list of the questions asked:

After Scene 4:

1. Why did the Russians go to the Aleutian Islands?
2. What were they going to have the Aleuts do for them?
3. What were they going to do to the Aleuts if they refused to help?
4. What did the Aleuts think the Russian ship was at first?
5. Why did the large ship seem so strange to them? What was it made of? etc.

After Scene 7:

1. Who did the Aleuts go to for advice about how to deal with the Russians?
2. What are some of the powers that Shamans are believed to have?
3. What did the Shaman tell them to do?
4. Was it good advice?

After Scene 8:

1. Were the Russians and Aleuts able to communicate with each other?
   a. In what way were they able to communicate?
   b. In what way weren't they able to communicate?
2. What was the significance of the gift exchange?
3. How did both sides feel after this first encounter?

After Scene 9:

1. Who can tell me what went wrong when the Russians and Aleuts met for the second time? Discuss thoroughly.
2. Who was at fault for what happened?
3. What did the Russians do when they went to the next island?

# BERINGIA

## BACKGROUND INFORMATION

At present the Eastern and Western Hemispheres are separated in the Siberian-Alaska region by approximately fifty-six miles of open water known as the Bering Strait. Underlying this region is a relatively shallow shelf which has been above sea level at various times in the earth's history due to major geologic changes brought about by wide-spread glaciation. This undersea shelf is, in some places, only 120 feet below sea level today.

The great ice ages were brought about by the earth's cycle of warming and cooling. They caused dramatic and continuous changes in the physical appearance of the earth's surface. For our purposes we will discuss only the last great ice age, the Wisconsin-Wurm. The Wisconsin-Wurm probably began about 70,000 years ago and lasted until about 10,000 years ago -- when our current climatic trend began. Throughout this period there were probably as many as twenty one different glacial advances and retreats with the geography of the world fluctuating as a result. The Wisconsin-Wurm ice sheets covered much of North America, Europe and Northern Asia during its peak. Todays ice sheets in Antarctica are as thick as 14,000 feet while the Wisconsin-Wurm was many times thicker. Glacial sheets of this kind stored much of the moisture of the oceans lowering sea level several hundred feet. This effect coincided to some degree with the retreat or advance of the ice sheets. When the ice receded during one of the Wisconsin-Wurm interstadials (warm periods), sea level would rise; conversely during an ice advance, sea level would drop. This effect was subject to a delay, however, due to the length of time it took for run-off from the glacier face to reach the ocean.

The underwater shelf in the Bering Strait was, therefore, often exposed during this period of 60,000 years. This area was over one thousand miles wide from north to south and equaled an area larger than Canada. This submerged continent is known as Beringia.

Beringia was a huge plain with few distinguishing characteristics. The flora probably consisted of hardy grasses and scrub brush. Beringia was always a windy, cold place with virtually no precipitation, technically an Arctic desert. Any moisture that might have fallen on the continent was stopped by the Aleutian Islands, which were, in the case of Beringia, the coastal mountain range. Because of the low moisture level there was no glaciation on the continent. In fact, the climate might have been too dry to support grasses except for the possibility of thick mists arising from the sea to cover the land during the brief summer months. During the winter months snow cover was at a minimum due to the general dryness and the constant winds.

The beginning of the Wisconsin-Wurm glaciation brought an end to the mild Sangamon interglacial period, an era which lasted approximately 50,000 years. The Sangamon was much warmer than our climate today. During the Sangamon, the lush warm weather vegetation migrated north along with the animals that fed on it. This migration brought many species to the Northeastern part of Siberia and the Western coast of Alaska. The onset of the Wisconsin-Wurm period caused the vegetation to retreat along with some of the animal species. However, the appearing continent of Beringia coupled with the advancing ice sheets forced many species to move out into the new continent. The only species that could survive in this bleak environment were the larger grazers and browsers and the predators which lived off them. Among the predators following the grazers and browsers was man.

Throughout the period of Beringias existence some fifty species were exchanged between the Eastern and Western Hemispheres. Some of the better known of these were the horse and camel which originated in the Americas and moved to the east; and the mastodon, woolly mammoth, bison, reindeer (caribou), fox, moose, wolf and bear that moved from Asia to the Americas. Some of these animals failed to find a viable ecological niche but ancestors of most of them still exist today.

The humans living on the continent, Beringia, probably had no conception of the transitory nature of their home and, indeed, it was permanent in comparison to their lifetimes. Beringia was in existence for thousands of years. Mans movements were not motivated by the need to cross the continent but rather by the need to follow the game they lived on. Eventually some bands did reach the other side and passed into Alaska's Interior, an area untouched by glaciation and populated by many species of animals. This movement across the continent of Beringia probably took many generations to accomplish and the people themselves were certainly not aware of any migration pattern. Some scientists believe there were two distinct groups of human inhabitants in Beringia; the interior hunters/scavengers dependent on big game for survival, and another group living along the coastlines. The coastal groups would have been able to exploit two ecosystems without the danger of competition from the larger predators of the interior. These coastal bands lived on an ever-changing coastline. Indications are that the coast never remained stable for more than one hundred years at a time; a fact which necessitated constant movement of these coastal populations. It is possible that these groups moved along the coastlines until they reached Alaska's coastline.

There are several theories about the method and time of mans entry into the Americas (south of Alaska and the ice sheet) from Asia. Evidence indicates that man has been in the Americas for at least 13,000 years and possibly as long as 15,000 years. This indicates that man was probably here before previous estimates and reopens the questions of how they arrived.

The dominant theory was that man migrated across the land bridge (Beringia) into the ice free portion of Alaska and then through a corridor in the main ice sheet and on to the rest of the Americas. This theory could be in question, however, due to the fact that there were few times when both the land bridge and the corridor were open. This theory doesn't explain the existence of man throughout the Americas at such an early date.

Another theory indicates that the receding ice sheets during interstadial periods left a corridor along the coastlines allowing bands of people to migrate along Alaska's coast then down North America's western coast until they could turn inland somewhere near California. This theory is somewhat more flexible as far as dates of migration.

There were probably several waves of migration. The first to come were the ancestors of the American Indians, while later groups included the ancestors of Eskimos and Aleuts. It is possible that the ancestors of the Eskimo/Aleut group actually came across the Bering Strait after Beringia was submerged again though it is generally believed today that they were the coastal peoples of Beringia while the American Indians came from the inland hunters.

Once the populations had reached the main continent, the receding ice sheets allowed the bands to spread and diversify into the different Indian tribes of the Americas.

# PLEISTOCENE MAMMALS

Conditions for migration of land mammals between Eurasia and North America were most favorable during glaciation when the land in the Bering Strait region was exposed. Many vertebrate species thought to be native to North America actually entered from Eurasia during the Pleistocene. Some examples of mammals entering from Eurasia and populating the broad plains of Beringia are bison, mammoth, mastadon, musk ox, antelope, brown bear, wolves, moose, mountain sheep, and wapiti. Some mammals that originated in North America such as camels and horses, migrated west into Eurasia from North America.

The Fairbanks area in Central Alaska is important for its abundance of ice age vertebrate fossils. Most Pleistocene vertebrate fossils are from unglaciated regions of Alaska, such as Fairbanks. The most common fossils of large mammals from this area, in order of abundance are bison, mammoth, and horse. These three animals along with the mastodon and saber-toothed cat are described in detail in the following pages.

# THE MAMMOTH

Scientific Name: Elephis Premegnecus

Life History: Appeared in North America between 60,000 -- 90,000 years ago. The mammoth migrated across the land bridge and inhabited the grasslands and forest borders. Evidence of the mammoth were found on the Arctic Coast, Seward Peninsula and scattered through the Interior. The mammoth were wanderers and were able to adapt themselves to wide diversities of climate. Paleontologists find many more mammoth bones than mastodon.

General Characteristics: The most specialized form of the elephant. Shaggy in appearance. Height varies from eight to twelve feet at the shoulder. Because of the extreme cold weather the mammoths coat was thick. The outer hair was about twenty inches long, dark reddish brown in color. Inner layer short, greyish blonde and wooly. Thicker hair formed patches on the cheeks, chin, shoulders, flanks, and abdomen. A layer of fat three and one-half inches thick covered the body. This served as insulation against the cold. The mammoth had four toes, while the elephant has five. Ears were small and covered with hair. Tail was shorter than the existing elephants, and was provided with a tassel of long bristly hair at the end. The most outstanding characteristic was the huge curly tusk that projected into the air in a semi-

circle. Largest tusks found were thirteen feet seven inches long and weighed one hundred eighty-five pounds.

Food Habits: Were grazers. Vegetation eaten was grass, flowering plants and herbs. Inhabited the grasslands and along the edges of the forests. The trunk enabled them to reach down and pick up the grass and plants, also to squirt water into their mouth. Although the long tusks prevented them from reaching the low vegetation, they were able to use the tusks to scrape the snow away. The teeth were made for grinding food. The surface of the tooth was covered with ridges. These ridges gradually wore down over years of eating. Then they would be replaced by a new tooth.

Economic Importance: Used for food, clothing, shelter and tools.

Extinct: Disappeared partly because of the retreat of the glaciers and warming of the climate. Partly from the effects of human hunting shortly after end of last ice age about ten thousand years ago.

# MASTODON

Time: Pleistocene age - about 20,000 years ago.

Range: Inhabited the forest lands. Therefore, were classified browsers. According to Paleontologists, the mastodon were fewer in number than the mammoth. Less evidence of bones were found.

Appearance: As compared with the mammoth, the mastodon is distinguished by its low forehead, short massive limbs and enormously broad pelvis. The height at the shoulders did not exceed nine feet nine inches. The hair was similar to the mammoth, long, coarse, brown with an undercoating of wool. The trunk was necessary to the mastodon's survival, without it, they would probably have starved. All of it's food and drink would have had to be scooped up with the tusks. With the trunk, the animal could tuck its food away and squirt water down it's throat. The longest tusk measured was ten feet with the average length being seven to eight feet. The tail was about fourteen inches.

Food: They ate vegetation found in the forest, mainly leaves, plants, and twigs. They usually had two molars on each side of the upper and lower jaw. Each tooth had six bumps or crests with valleys between them. They were used to strip the leaves off the branches.

# BISON

Scientific Name: Priscus

Range: Was abundantly distributed throughout a large part of Alaska. Rivaled the mammoth as a wanderer. Inhabited the grasslands.

Appearance: The bison followed the mammoth in size, resembling the bison today. The shaggy, massive head was one fourth the size of the rest of the body. Long brownish-black hair covered the body except for the hind parts. They were lighter and shorter. The horns of the extinct bison vary from short to long. They measure around six feet across from tip to tip and eight feet six inches along the curve.

Diet: Were grazers. Grass and flowering plants.

Economic Importance: Food, clothing and shelter. The bones were used for kitchen utensils and tools.

# HORSES

Scientific Name: Eophippus (Eocene Epoch) 55,000,000/40,000,000 years ago.
Mesohippus (Oligocene Epoch) 30,000,000/25,000,000
Merychippus (Meocene Epoch) 26,000,000/14,000,000
Equus (Pleistocene Epoch) 1,000,000 to 10,000

History: The remains of extinct species of horses have been found in many areas of Alaska and Western North America.

Appearance: Evidence suggests the earliest horses were small -- no bigger than the size of a fox. The horses became larger as time evolved. Their heads looked somewhat like a deer's head. Instead of a hoof they had four spread out toes. Each toe possessed a small hoof. Their tails were long and pointed. The horse gradually changed appearance. The second species of horses, the Mesohippus, had three toes on all four feet. It was during this time that the horses started to eat grass. By the time the Merychippus horse arrived, all horses were grass-eaters. The Merychippus was about the size of a sheep and looked much like horses do now. The fourth horse, the Equus, is the modern horse.

Diet: The horses were browsers up until the Mesohippus period. The world was changing. Swamps and forests were giving way to grassy plains. Trees became extinct so there were no soft leaves for the Eohippus. They slowly died out giving way to the grazers.

Extinct: Man played a considerable part in the disappearance of the horse. Not by killing them off directly, but by continually hunting and chasing and then driving them from the best feeding grounds and interferring with their habits and opportunites for grazing.

# SABER-TOOTHED TIGER

Scientific Name: Smyeloden (smy-luh-dabin)

History: Pleistocene period. Migrated from the old world.

Appearance: Resembled the mountain lion and tiger. The body however, was larger and stockier than that of today's lion. The legs were also shorter. The neck had the appearance of a mane. They are an extinct member of the cat family. More ferocious appearing than the regular tiger. The fangs characterizes them the most. They are six inches long and shaped like a saber, or like a dagger. The jaws could swing up to $90^{o}$, like a serpents.

Diet: Carnivorous. Bison, horse, camel and the human made up the tiger's diet. The long fangs gave them an advantage in hunting the hairy, woolly animals of that day.

# ARCHEOLOGICAL DIGS IN ALASKA

# AND

# DATING MATERIAL

## STRATIFICATION

Scientists who study fossil plants and animals and human artifacts can determine the age of a particular area or artifact by several methods. Stratification of material gives the relative age of each layer to another layer. If one layer of a site can be dated, perhaps through correlation with some geological event, it may be possible to establish certain minimal and maximum dates for the deposits above and below. Stratification is extremely important to establish that one culture period did, in fact, precede or follow another one in time at the site.

## $C^{14}$ DATING

The dating of organic matter found in a site is usually done by the $C^{14}$ method. $C^{14}$ is a radioactive isotope of carbon formed by cosmic rays from the nitrogen. $C^{14}$ exists in uniform distribution in the atmosphere and is breathed in or taken in with food consumed by all living organisms but stops at the time of death fixing in the tissues the $C^{14}$ inherent at the time of death.

All radioactive substances decay from radioactivity to non-radioactivity at a fixed rate not subject to change by any kind of force or influence. Each radioactive substance has its own rate of decay. $C^{14}$ has a half-life of 5730 years. This means that half of the radioactive $C^{14}$ will disappear in about 5730 years.

$C^{14}$ test consists of counting the emmissions from a prepared sample of organic material in a specially constructed Geiger counter. Modern organic material averages 6.68 emission per minute; the older the material

the fewer the emissions. With a half life of 5730 years, $C^{14}$ dating is possible as far back as 40,000 years and with enrichment processes back to 70,000 years ago.

Any organic material left behind by man, animal or plant can be dated using $C^{14}$. A handful of charcoal, an oyster shell, wooden house support, a piece of antler, seeds from a plant, stands of willow, etc., have all been dated by $C^{14}$.

There are some problems with $C^{14}$ dating. One of these is obtaining the necessary sample. Suitable organic material is not always present in all sites. Furthermore, any materials tested are destroyed in the process of reducing it to carbon and archeologists are reluctant to sacrifice key specimens.

Contamination is also another danger. If younger materials are incorporated into the sample, the dates will be too young. Root penetration from plants or the activity of burrowing animals are two examples of this. The addition of dead carbon, such as from leaching of coal, will make the dates too old.

## DENDROCHRONOLOGY

Another method of dating artifacts of wood is dendrochronology or wood timing. Each year a tree expands by one ring of wood. These rings vary in width each year depending on the weather for that year. The exact succession of wide and narrow rings is, therefore, a graph of the climate of the years through which the tree has lived. A master chart or graph can be constructed for as far back as a living tree can be found. So far, one graph in California has been established for over 7,000 years. In Alaska, J. Louis Giddings has set up a dendrochronology graph in the Kobuk River area.

## FOSSIL INDEXES

Index fossils are used if they are available. Index fossils are fossils that appear only during a certain period of earth's history. Whenever they are found, a maximum-mininum age can be obtained for the layer they are found in.

## PALYNOLOGY AND PREHISTORIC ENVIRONMENTS

The study of plant pollen in ancient soil layers is a method of determining the plants which grew in an area. Since plants are restricted by climatic conditions, the pollen they leave behind gives an indication of the environmental conditions at the time of their growth. However, not all pollen preserves well, and pollen is easily transported by wind into sites where plants may not have grown, so it may not give an entirely accurate representation of the original environment. Scientists also use other methods to determine the age of Pleistocene remains found in interior Alaska and these have also contributed greatly to our knowledge of the Pleistocene environment and history of Alaska.

## ARCHEOLOGICAL SITES IN ALASKA

More than 3,000 archeological sites have been identified in Alaska. However, few of them have been excavated due to the cost of field work and the time involved. However, enough important sites have been dug to show the wide distribution of Alaska's first people and their life styles. Much work remains to be done in order to fill in the numerous gaps, as well as to possibly push back the time when the first man arrived in what is now "Alaska".

The earliest known archeological sites in Alaska are believed to be at least 12,000 years old -- a couple seem to be as much as fifteen or

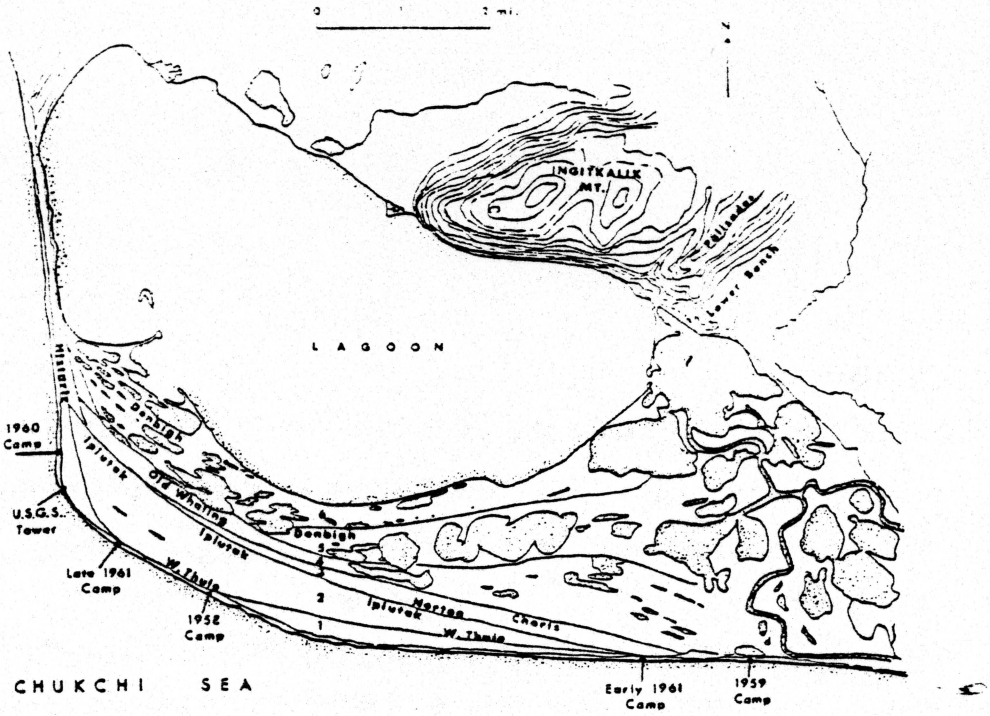
sixteen thousand years old. The material indicates that hunting and gathering people lived in Alaska. Only five digs will be described in this section. The five selected digs are among the most significant yet explored in the state and also give an idea of the distribution of the people in Alaska.

J. Louis Giddings' book "Ancient Men of the Arctic" is recommended for the teacher as an excellent introduction to archeology in the state.

# CAPE KRUSENSTERN

At Cape Krusenstern, thirty-five miles northwest of Kotzebue, are one hundred fourteen beach ridges formed over thousands of years as the shorelines changed. Some of these beach ridges are as much as three miles from the ocean today. An extensive archeological excavation of these ridges by J. Louis Giddings revealed that the ridges showed a succession of cultures extending from the present to at least 8,000 B.P. (years before present) -- perhaps much earlier.

The following chart shows the progression of cultures and the beach ridges they were found on. 1). The dates indicated are when that culture was developed to the point where it was distinctly different from the previous one. 2). The Denbigh culture of about 5,000 B.P. is believed to be the first culture identifiable as proto-Eskimo.




*Map* 2. The beach ridges at Cape Krusenstern, Alaska:

| Segment | Beaches | Sites and Age |
|---|---|---|
| 1 | 1–8 | Recent |
| 2 | 9–19 | Western Thule, about A.D. 1000 |
| | 29–35 | Ipiutak, about beginning of Christian era |
| 3 | 36–44 | Norton, about 500 B.C. |
| | 44–51 | Choris, about 1000 B.C. |
| 4 | 53 | Old Whaling, about 1800 B.C. |
| 5 | 78–80 | Late Denbigh, about 2500 B.C. |
| 6 | 83–104 | Early Denbigh, about 3000 B.C. |
| Ingitkalik Mt. | | Lower Bench, about 3500 B.C. |
| | | Palisades II, about 6000 B.C. (?) |
| | | Palisades I, much older |

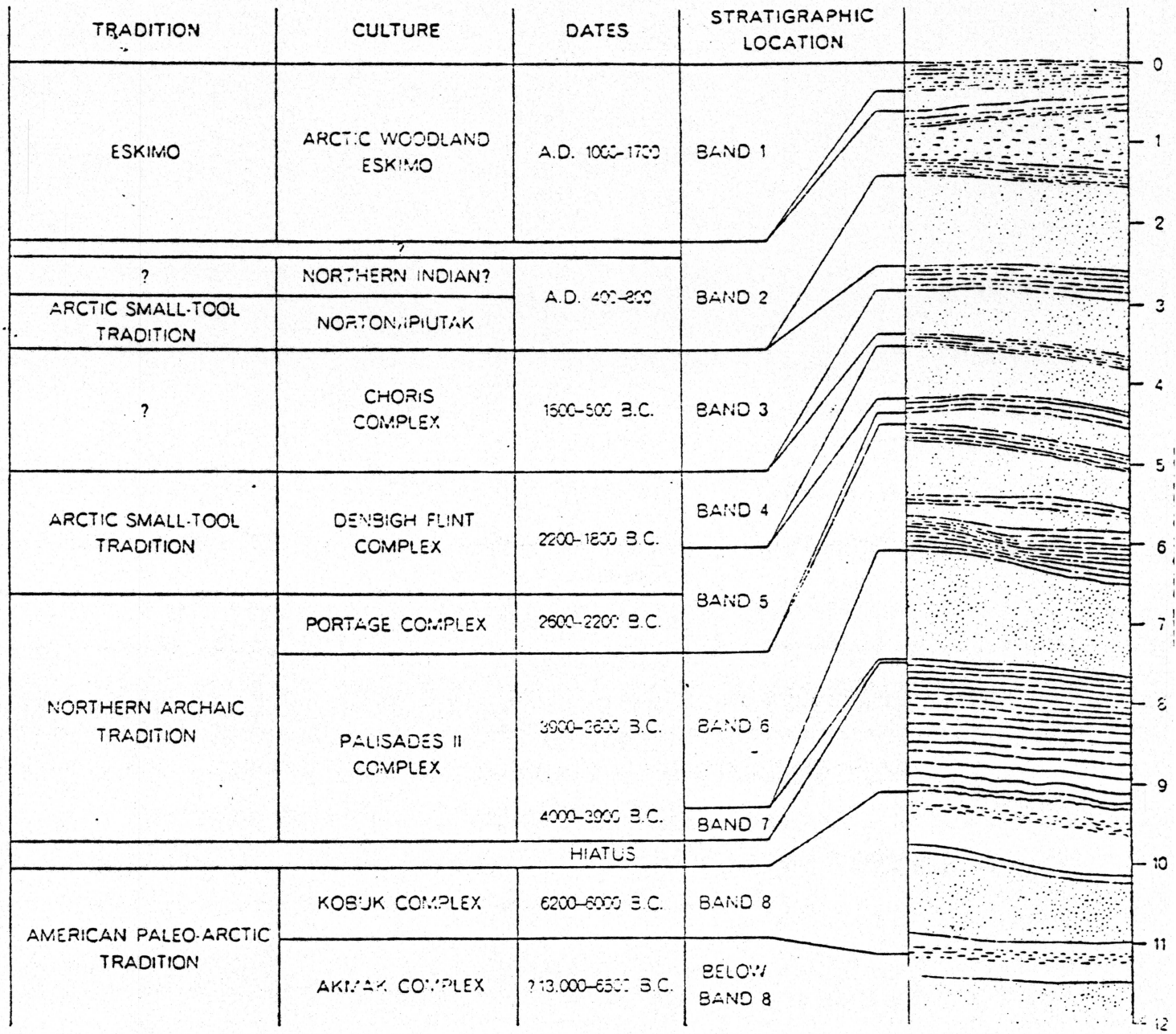
(Taken from Ancient Men of the Arctic by J. Louis Giddings, P.11)

# ONION PORTAGE

Onion Portage is located about one hundred twenty-five miles east of Kotzebue where the Kobuk River makes a lazy five mile meander. The name Onion Portage comes from the wild onions growing there and from the habit of people hauling their boats across a short portage to save five miles of paddling. On a sandy knoll, undisturbed by stream erosion for thousands of years, hunters have camped. Over thousands of years the lower and outer parts of the knoll have been buried several times under sand eroding from gullies in the knoll. Windstorms have helped, also, until in places the stratification is twenty feet thick.

Eight distinctly different bands of soil were discovered going back in time at least 8,500 B.P. and perhaps as much as 15,000 B. P. Artifacts from the lower layers are still being analyzed.

Onion Portage is unique for its dual occupation by both Indians and Eskimos -- although not at the same time. Because of the deep layering at the site, Onion Portage is one of the most important finds in the state. The following graph shows the groups that have occupied Onion Portage, the dates they were there, and their stratigraphic location.




EIGHT MAIN BANDS in the stratigraphic column uncovered at Onion Portage are related in this chart to the evidence of human occupation they contain. Starting before 6,500 B.C., and probably much earlier, three major cultural "traditions" succeed one another. The third tradition, interrupted about 1,800 B.C., was initially represented at the site by the culture named the Denbigh Flint complex. It was evidently ancestral to the Eskimo tradition that appeared at Onion Portage about A.D. 1000 and continued thereafter.

# DRY CREEK

Dry Creek archealogical site is located near Healy Lake and was discovered only very recently -- in 1973. It is a stratified site several feet deep on a bluff overlooking Dry Creek. Numerous stone artifacts including scrapers, cores, and microblades have been found. Most significantly, however, was the first discovery of bones of ice age mammals in direct association with man in Alaska. Bones from prehistoric horses and bison have been found at the Dry Creek site. C14 dates have established that man was there over 10,500 B.P.

# GROUND HOG BAY

Only a few pre-historic sites have been located in Southeastern Alaska where the towering rain forests and heavy undergrowth hide and erode places where man may have lived. The heavy rainfall also helps artifacts of bone and wood to deteriorate. One ancient site discovered is at Ground Hog Bay on Icy Straits opposite Hoonah. This site has been occupied at several different times over the last 9,000 years. This is the oldest site so far discovered in Southeast Alaska.

# ANANGULA ISLAND

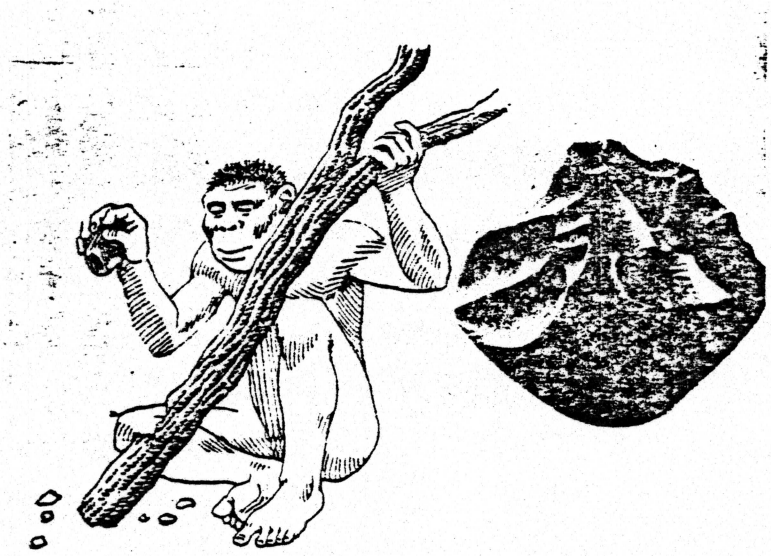
The oldest Aleut village site yet discovered is on Anangula Island located on an islet off the coast of Unmak Island in the Fox group of the eastern Aleutians. Over 30,000 stone scrapers and other tools have been recovered. Based on scientific analysis, people were living on Anangula Island about 9,000 years ago. The site appears to have been occupied for less than a century when a heavy cover of volcanic ash rained down -- probably killing the local flora and fauna. Anangula was unoccupied then for a period of about 4,000 years. From about 5,000 years ago the area has been occupied more or less continuously.

In 1974 a team of Russian and American archeologists announced that several of the kinds of tools unearthed on Anangula matched other blades previously discovered in Siberia. They declared, "This is the first direct link we've had that the Aleuts came to Alaska via the Bering Land Bridge."

# PREHISTORIC ARTIFACTS

The first tools used by man (about two million years ago) were simple to make. Time passed and the tools slowly became more complex and refined (500,000 years ago). As more time went by, man learned how to make different kinds of tools and more complicated tools (60,000 years ago). As still more time passed, more of these different and complex tools were made (beginning 40,000 years ago).

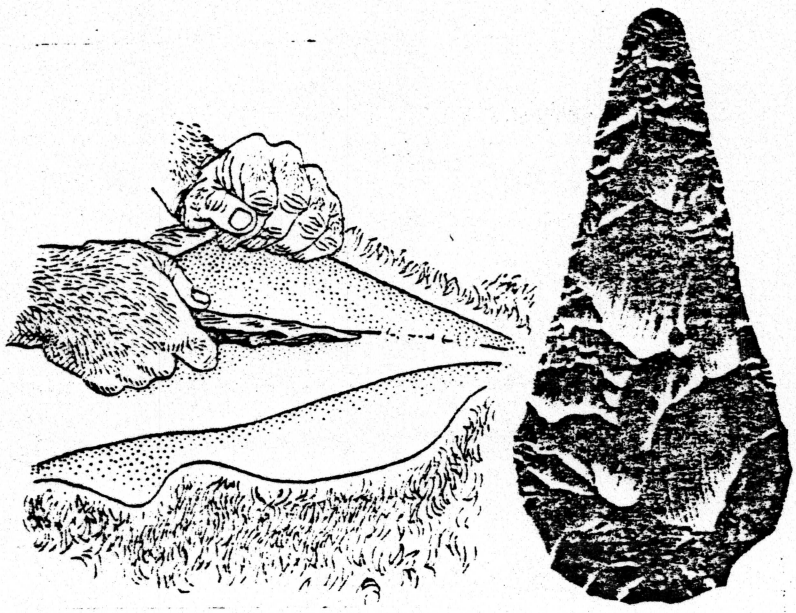
The following discussion and pictures will illustrate how tools became more complex.



(Taken from Howell 1965:114

This is the oldest type of tool found (1,500,000 years ago) and it is made of stone. It is called a pebble tool or chopping tool. It may have been used to chop wood or crack bones.

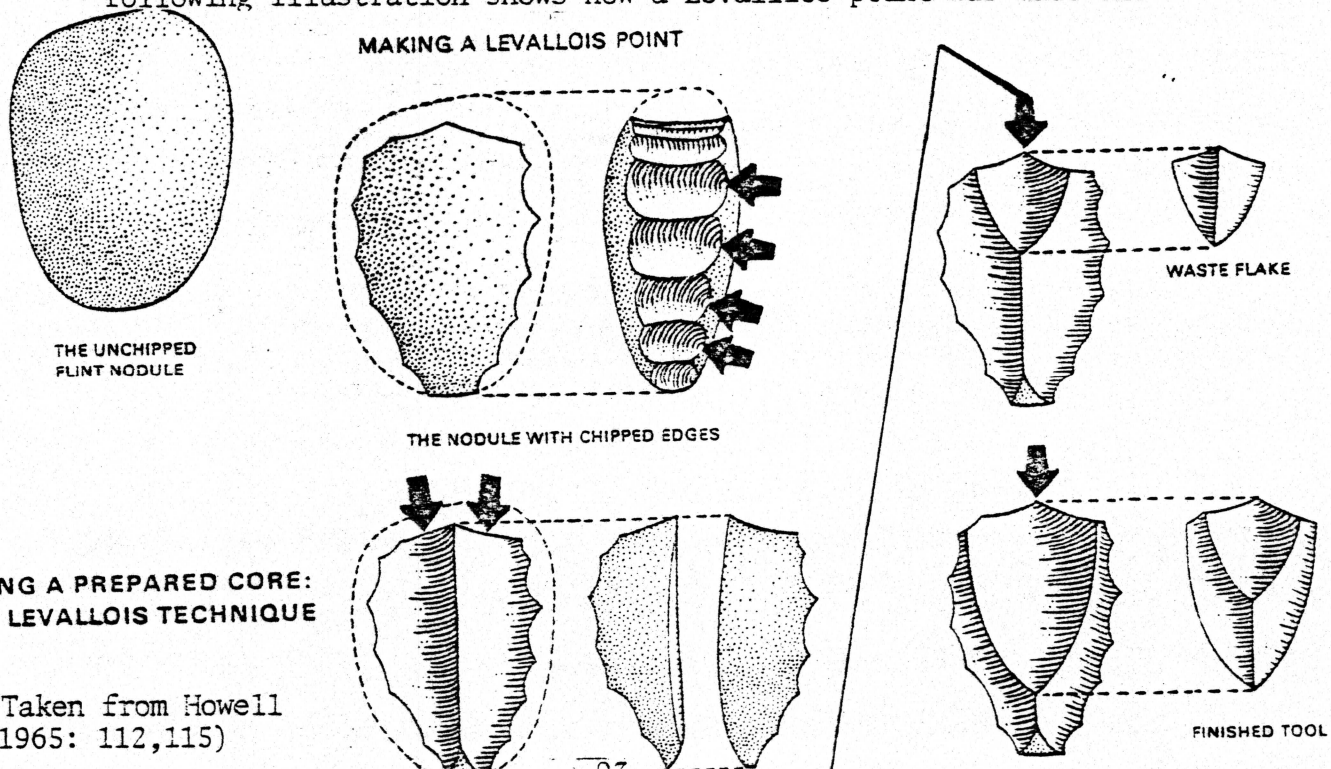
Time passed and more complicated pebble tools were made. Finally, man learned to make a handaxe. The following handaxe is not one of the first handaxes, but is a complex handaxe made much later in time (250,000 years ago).



(Taken from Howell 1965:114

This tool is called an acheulian handaxe. The little chips of stone were probably knocked off the edge of the handaxe with a piece of wood or bone. This tool looks like an axe, but was probably used for many activities.

More time passed and man learned how to strike certain types of flakes off from stones and use them as tools. Some of these earliest flake-tools are called Levallois (beginning at 125,000 years ago). The following illustration shows how a Levallios point was made and used.

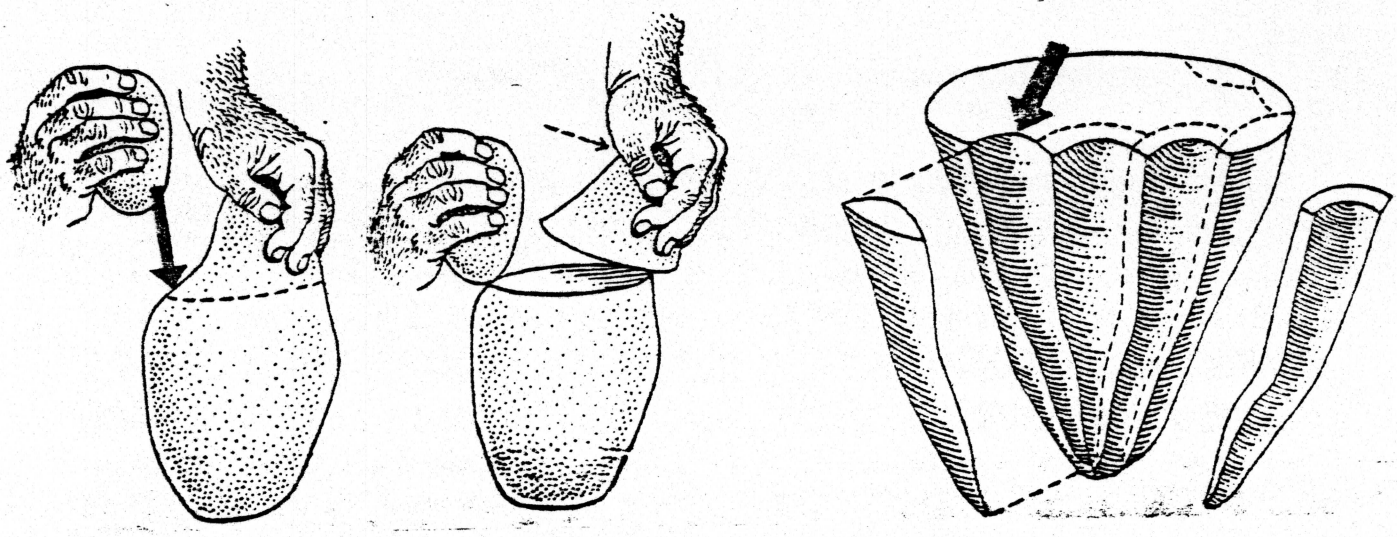



USING A PREPARED CORE: THE LEVALLOIS TECHNIQUE

(Taken from Howell 1965: 112,115)

More time passed and man learned how to strike off many flake tools from a single core (45,000 years ago). The following illustration shows a core that can produce many blades.

**BLADE CORE TECHNIQUE**

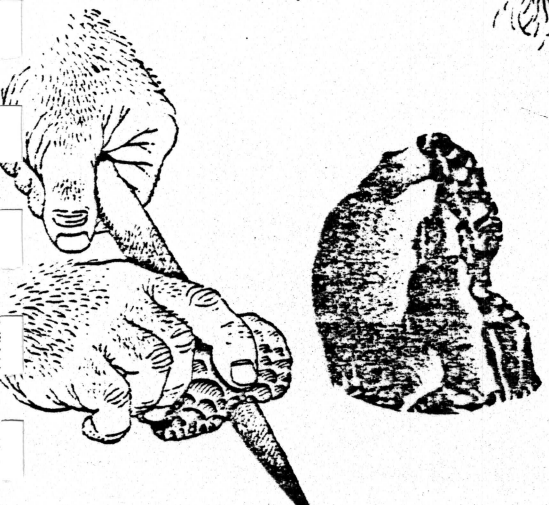


(Taken from Howell 1965:113)

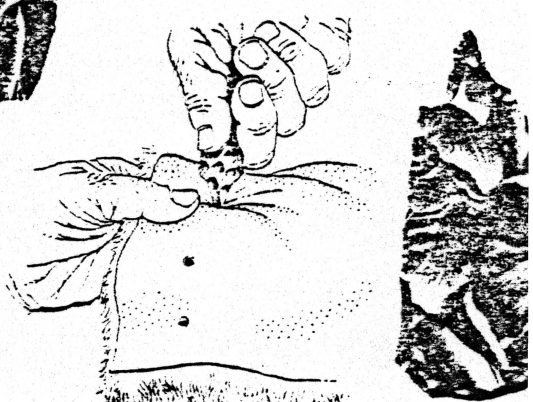
The stone tool maker could strike the core in different ways and thereby produce different blades for different work. The blades would usually be further chipped to make specific tools. The following illustrations show flakes that have been further worked to produce tools.

A dulled blade for easy handling

A denticulate or notched tool.

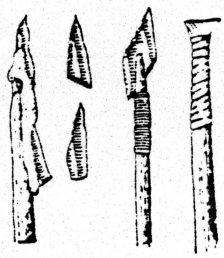


A borer



(Taken from Howell 1965:114-5)

By now, thousands and thousands of years had gone by since the first pebble tools were made. A little more time passed and man learned how to make small tools (40,000 years ago). These were made on small blades or flakes. These tools were often less than an inch long. The following illustration shows examples.



(Taken from Bray 1970:147)

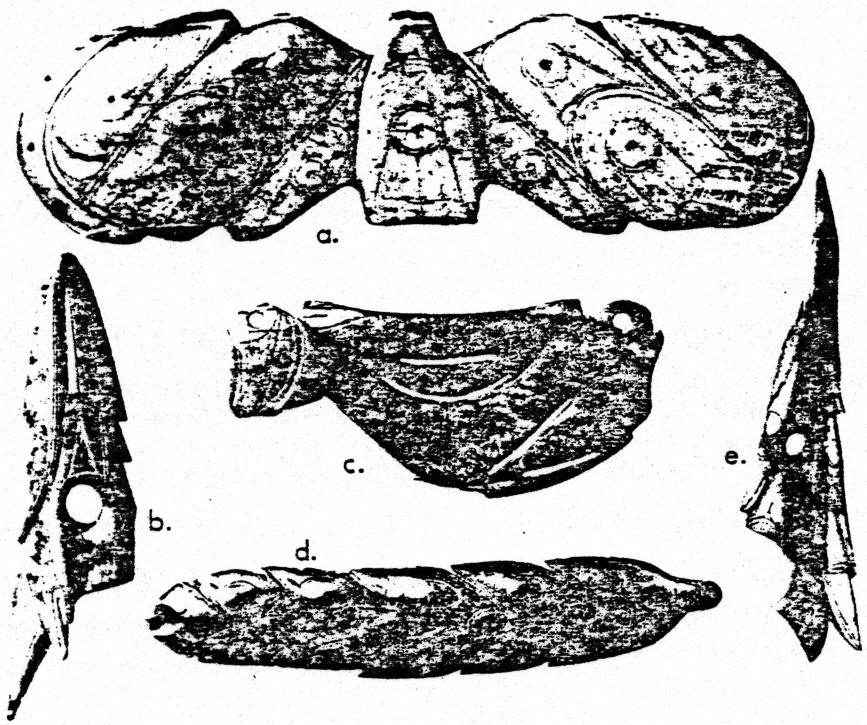
After man learned to make these small tools, he also migrated to Alaska. The following illustrations of small tools and flakes came from Cape Denbigh on Norton Sound.

(Taken from Giddings 1967:263)

The two cores at the top left are small. The larger one is 1¼" long. From this core blades were struck. Some of the blades shown have further flaking done on them.

After little time the people in Alaska who lived on the coast used tools suited for hunting sea mammals; and people who lived along the rivers, away from the coast, used tools suited for hunting in the forests.

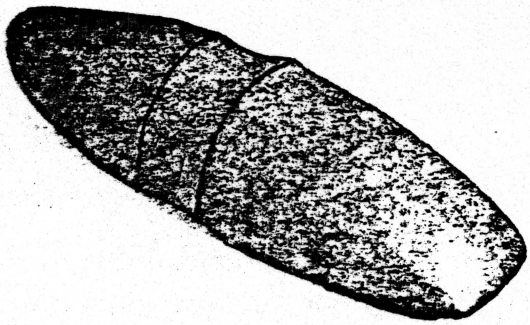
For the people who lived along the western coast of Alaska, ivory became an important material for making tools and other objects. The following are examples:



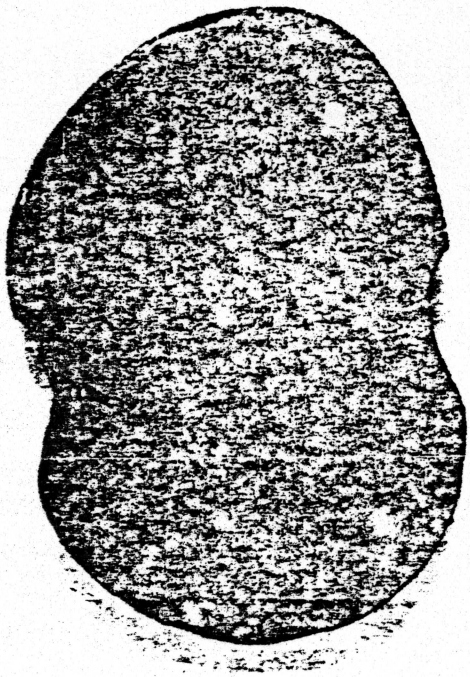

57. Carved ivory objects. Old Bering Sea culture:
a) winged object
b) harpoon head
c) ornament
d) pail handle: length, 6¼ in. (15.5 cm.)
e) harpoon head

(Taken from Giddings 1967:158)

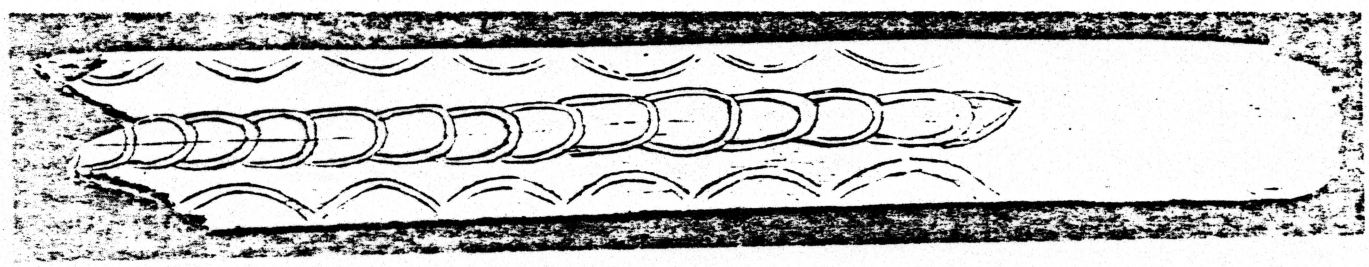
The following illustrations are some tools used by people who lived along the rivers in the interior. Photos are taken from National Museum of Man 1974:49,51,52.



A) This is an adze and was used to split wood. It is almost eight inches long. It was found in the Old Crow area, Yukon Territory.



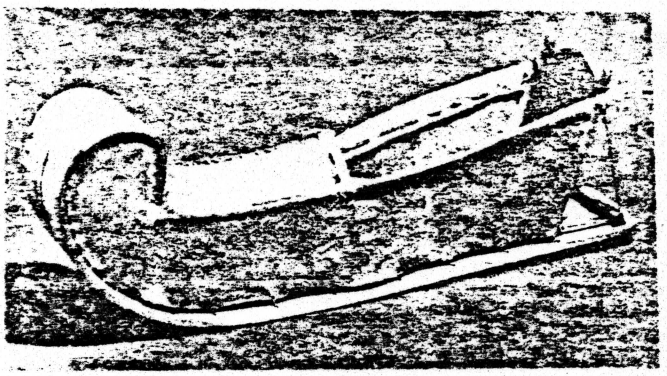
B) This probably was a sinker used to hold down fish nets. This was found along the Koyukuk River.



C) This is a bone tool. It most likely was used to take off the hide from an animal. It was found near Aishihik Lake, Yukon Territory.

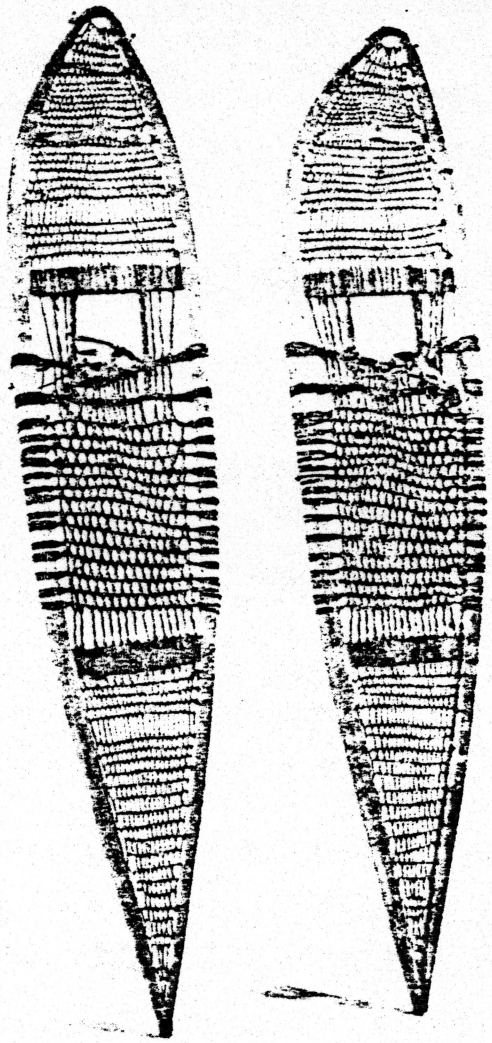
(A.B.C. taken from National Museum of Man 1974: 49,51,52)

Besides ivory, bone, and stone tools, people in Alaska and other places, too, used parts of animals, wood, and some other material such as grasses, and shells. However, the harder materials, such as ivory, bone, and stone, last much longer in the ground than softer materials. Because of this, archeologists spend much time writing about harder materials. The following illustrations show wood and cloth artifacts of Native Alaskan people in recent times. Similar artifacts probably were used when the first small tools were made in Alaska.

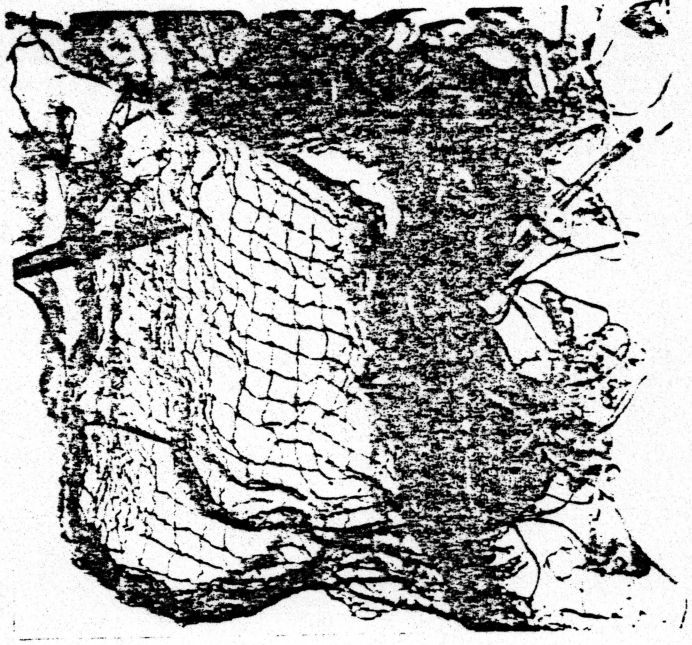


A) Toboggan made from birch, caribou hide, and sinew thread.

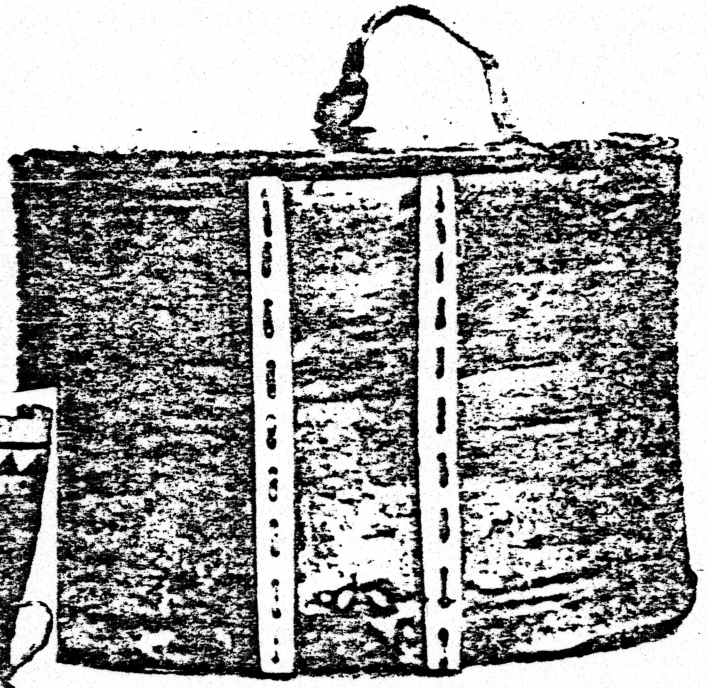
B) Caribou-skin clothes sewn with sinew and decorated with red and white porcupine quills.



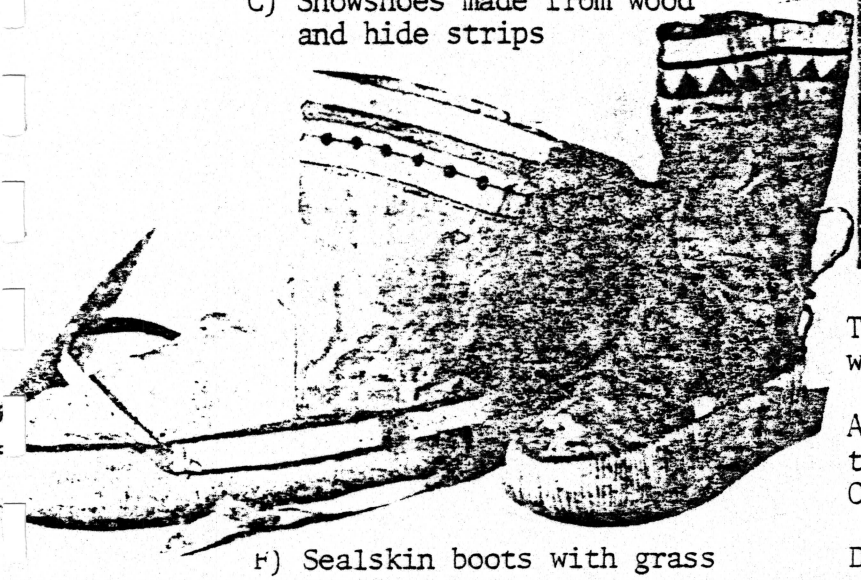
C) Snowshoes made from wood and hide strips



D) Fish net made from sealskin string and stone sinkers



Trinket box made from birchbark, driftwood, sealskin and eight brass nails.



F) Sealskin boots with grass inside

A,B,C, Interior artifacts. Photos taken from National Museum of Man, Ottowa 1974 75,85,127.

D,E,F, Coastal artifacts from Northern and Western Alaska. D,F, photos taken from Van Valin Collection, U/A archives. E photo taken from Ray 1977:210.

From the first pebble stone tools to the fancy flake tools and other artifacts, man made great progress. This progress happened slowly over <u>many</u>, many years. Is progress slow or fast today?

## "DEVELOPMENT OF MAN" BOOKLET

One project that would involve each student working on an individual project that would be combined into a group project would be for your class to produce a booklet of their experiences with the program. This booklet would be a combination of artwork and reports/essays. Your class could take an analytical objective approach, an imaginative subjective look, or a combination of the two.

With an analytical approach, the following topics are ones that should be covered:

1. Beringia.
2. Man's crossing Beringia into Alaska.
3. Pleistocene mammals.
4. Hunting of the mammals by man.
5. Man's migration from Alaska to the rest of North America.
6. Archaeological sites.
7. Archaeological methods.
8. Artifacts of early man.
9. Aleut lifestyle at time of Russian arrival.
10. Arrival of the Russians.
11. Meeting between Aleuts and Russians.
12. Tool making and tools.

An imaginative approach would allow the students to become role players. Some of the possible roles that they could assume in their writings and artwork are as follows:

1. They are among the first band of people moving into Beringia.
2. They are hunting a large herbivore, such as a mammoth.
3. They are being hunted by a predator like the sabor tooth cat.
4. They are traveling down the twenty mile wide corridor between the glacial masses on their way from Alaska to the ice free parts of North America.
5. They are making a weapon for hunting.
6. They are making a set of clothing for themselves.
7. They are one of the Russian trappers spending the winter on an Aleutian Island.
8. They are one of the Aleuts who come in contact with the Russians.

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